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THE HOSPITAL: AN ELEMENT AND EXPONENT OF MEDICAL EDUCATION.

An address delivered at the formal opening of the new Hospital of the University of Michigan Jan. 20, 1892.

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The marvelous rapid growth, which has spread its iron threads, as a spider's web, over mountains and valleys and mighty rivers, in fewer years, than the aeons of time, in which nature has channeled her water-courses—which builds a million-peopled metropolis upon a waste plain within a human generation—and which runs the gamut of social development from the ragged barefoot of the frontiersman's cabin to the cultured man of science, as a musician would a chromatic scale,may well cause one to pause in his intended teachings,who comes hither from the part of our country, which we, who live there, think so old—the narrow strip of coast-line whereon our forefathers rested with their children, before they began their giant strides towards the west. The courteous invitation to assist at the formal opening ceremony of this new hospital, coupled with the request to say something about the hobby I have ridden so often elsewhere—Medical Education—has fortunately saved me from the dilemma of attempting to enlighten where no enlightenment is needed,for in speaking of the hospital as an element and exponent of medical education, I have only to eulogize the work you have already done, and bear testimony to the practical demonstration in this place of the good fruit, which the well-cultivated tree of medical knowledge may be made to bear.

The institution and development of a great hospital are in fact the best fruit of that wider understanding, which comes from the higher education in medicine, upon which all its earnest and disinterested followers, in these days, insist. The hospital is the expression of man's tenderest sympathy for his hapless suffering brother, and it stands, with doors opening ever inward, to give the warmest welcome to him who is most hapless and most suffering. Gathering these helpless ones within its walls and inviting the solution therein of the most complicated problems of disease, it calls for the adroitest skill, the profoundest learning, the widest research and the most patient investigation. All these the great modern schools of medicine, in generous emulation, are now seeking to promote, and none with greater zeal and assurance of success than the University, under whose influence this institution has come into being.

Once upon a time, I believed, as all good Philadelphians were wont, and as doubtless many still do, that no good medical thing could come out of any but the Nazareth on the banks of the Schuylkill, and it was only grudgingly admitted, after many years, that other waters on which the Eastern sun arose, might brew good beer, though not of course, quite so good as that which the fathers in medicine quaffed behind the red brick fronts of the quiet Quaker town, whose name of brother's love fitly types the spirit which moves men to enter upon the study of that greatest evidence of man's love for his brother man, which we call medicine. But, who among those reverend and revered fathers in medicine would have turned his eyes westward to scan prophetic sites of new temples to the Aesculapian god, on river banks and among forest wilds, where only red men were leading their simple lives? Yet, no laurel-wreath more worthily adorns the newer America of the West, than that which she has won, in her endeavor to make the culte of medicine pure and undefiled and to build for it temples where only the true faith—being the faith of truth—shall be inculcated, and of one such we are honored guests to-night.

If there be one truth, brighter than all others, which higher education in medicine has caused to be proclaimed as a gospel of "good tidings of great joy, which shall be to all the people," it is that the prevention of disease is the physician's first and highest office, and to the glory of the west, this sapling from the tree of knowledge there took firmest root and brought forth its first fruit in the shape of the splendid system of State Boards of Health, which have contributed so much to the health, strength, productive power, wealth and prosperity of this country, and of which it ought to be supremely proud. When no other of the original thirteen, or their eldest offspring, followed the lead of Massachusetts, whose eternal honor it was to have instituted the first State Board of Health on the 21st of June, 1869, it was California, youngest sister of them all, and from the extremest west, which took up the movement, to be followed by Minnesota and she by Virginia, with, however, but feeble ardor, the fifth in the order of sequence having been Michigan, which from the start acted with a vigor of purpose that has grown, year after year, until to-day her State Board of Health is one of the most able, most efficient, and most useful of those famous engineries for stamping out preventable diseases, which have done more towards lengthening human life, improving the race, and increasing the productivity of the State, than all the drugs and drug-mills that have been in operation since its beginning. After Michigan, naturally came her nearest neighbor, Wisconsin, and of the eleven that followed in their wake, seven were also western organizations, among which Tennessee and Illinois have been especially note-worthy for energetic and beneficial sanitary action.

As a better understanding of the real scope of our sublime science has exalted preventive medicine to its high estate and led to the institution of the means for its application, these very means have themselves

come to be the instruments for weeding from the fair domain of our profession, the tares which have overgrown it, and for driving from the temple the money-changers and charlatans, by whom it has been defiled, dishonored and disgraced. It was in the west that the State Board of Health became the State Board of Medical Examiners and with peculiar appropriateness sought to exterminate, among the other preventable morbific agencies, that arch-enemy of the public health, the false physician. I have been for some years endeavoring to collect funds sufficient to erect at the National Capital a monument to the greatest physician this country has produced, the immortal *Benjamin Rush*, but the late Secretary of the State Board of Health of Illinois, whom I count also as among the great physicians of America, has builded his own monument in that splendid report on Medical Education, through which the State Board of Health of Illinois, became the van of the army of the west, and he its commander-in-chief, in the campaign against the host of medical pretenders, who have entrenched themselves in every town and village. A man of unostentatious habits, modest in demeanor, tireless in work as he was inconspicuous in his working, generous, big-hearted, beloved by all, a typical western man, if it may be permitted me so to say, John H. Rauch of Illinois, the animating spirit in this conflict, has fought a brave fight in the cause of medical education, and won a fame, which no epauletted hero could outvie, across the Atlantic as among his own grateful countrymen.

Were this audience exclusively of medical men, the subject of medical education would require no definition, since it is one—the prominent one—interesting the profession to-day, and while it cannot be claimed that the 106,000 members of the fraternity are a unit in their views, it is safe to say there are but two sentiments entertained respecting it—the one, that of the entire body of physicians who are themselves educated, and the other, that of the sciolists and smatterers, the pretenders and charlatans—and pity 'tis, 'tis true that the former are not numerically the greater. It might seem the discreeter part to keep this to ourselves as a family failing, but the cause of medical education can only be advanced by acquainting the public with its need, by candidly admitting that the designation "Doctor" is not *per se* the distinctive title of a man learned in the science and art of medicine, and by avowing, however humiliating the avowal, that the diplomated certificate in academic Latin that Gulielmus Smith or Johannes Brown "in medicinæ arte optime versatus est," displayed with college seal and broad blue ribbon in handsome frame upon the doctor's office wall, is not a patent of professional erudition and ability. It ought to be that by virtue of his office, the doctor in medicine should be the recognized superior in learning, culture and acquirements in every community, great or small, and that this is not so is the lamentable reason for the agitation of the subject of the higher education of medical men, meaning thereby their proper education.

What guaranty have you that the man claiming to be a physician is really one? He has a diploma, but diplomas have been bought, without the farce of sham tuition, and for a contemptibly cheap price. He is the graduate of a medical college, but there are colleges at which instruction is but a pretense, where no attendance is required, and where the chief solicitude of the examiners for degrees is to ask a question or two that cannot fail to be answered—colleges where the size of the class is the ambition and the payment for the tickets the paramount concern. After a personal experience as a physician of almost forty years I do not hesitate to declare that the greatest danger I have dreaded for my family when going to strange places has been the unknown doctor, and I have always cautioned them that it were safer to run such risk as may be from doing nothing the one time in a hundred when something should be done than encounter the far greater peril of having that one thing wrongly done by some pretender, who does not content himself with the "yarbs" and roots of the country old-wife, but dabbles in potent pink pellets, of whose actions and uses he knows only what he gathers from their advertising wrappers. Hence the interest of the public in the thorough education of the men to whom their own and their dear ones' lives may be committed, and why they should understand just what is this medicine, which requires such skilful ministering. Certainly, it is not the mere mending of sores and bruises by plaster and poultice, the giving of sweats and purges, the fussy fumbling of the pulse, or the solemn inspection of the trembling protruded tongue, since any village Sairy Gamp is adept enough with healing balsams, and hits many a bull's eye, with "castor ile" and "hiery-pikry," or "bone-set," stripped up or down according to its intended working.

The minister of the body's health has as grave an office as the minister of the soul's welfare, for the *mens sana* can only reside *in corpore sano*, and his preparation for that office is serious without parallel, for to know that body well involves the study of the most marvelous intricate mechanism ever fashioned by the Divine Will, and to know how it lives and moves and has its being requires a thorough understanding of everything surrounding and influencing it—hence of everything upon the earth and in the air and in the waters, and off in the vast abyss of Cosmos. So, the physician, from the very etymology of his name, is the student of *Φυσιζ*, that beginningless and endless vibration of Omnipotence, which man alone among created beings has been able to comprehend, though only as through a glass darkly. It is in no invidious sense, that beside this stupendous study, the soul's guardian has an easier task, having only to teach the obligation to love the Lord God with all one's heart and soul and mind, and to love one's neighbor as oneself, and teaching this best in the simple phrase of the Saviour of mankind, rather than in the abstruse terminology of theological schools. The physician of the sin-sick soul has only this remedy, itself a spiritual one, to administer, to lift that soul to its highest possibility and cure it of every spot and blemish—believe and be saved: while the physician of the body has not only the pains and aches of the individual to combat, but those morbific tendencies and agencies which assail masses of men, communities, nations and whole races, subjected to the hostile influences of climate and the pestilential sequelæ of war, famine and drought, and this broad view of his sphere of action has been opened by that better medical education, which teaches that however perplexing the question of individual cases of disease, far more difficult and important is the problem how to banish disease from the earth, that human life may be lengthened, the

strength and vigor of the community be increased, the welfare, happiness and prosperity of the whole people be assured.

It needs no argument that men charged with such weighty responsibility should be thoroughly fitted for it, but let us think for a moment how doctors have been made—"M.D.'s," as they are familiarly termed from the collegiate distinction bestowed upon them at graduation—a distinction, one of the most honorable to which an educated man can aspire, for whether a *Doctor* in Medicine, or Law, or Theology, or Science or Philosophy, it signifies, as the diploma conferring it asserts, that he has become entitled to this high approval by study, by research, by original thought, or by invention or inquiry in one of these great intellectual pursuits. Had this been so, there would have been little need for insistence upon the better education of those entering upon the study of medicine. Men much younger than myself must have vivid recollections of medical schools of great pretension, whose benches were crowded by a strange company of young and old, from city homes and distant rural localities—a few fresh from college or academy, but the majority without sufficient preliminary education to enable them to take notes of the lectures to which they listened, but which they could not possibly comprehend. To such a one, the common technical language by which the anatomist described the first bone was an unknown tongue, and when, by dint of repetition, he had learned that *corpus* meant body, *foramen* hole, *sulcus* groove, and *articulus* a joint, he had to flounder among sterno-cleido-mastoidei, gyri fornicati and columnæ carneæ, or track the tortuous way of a pneumogastric nerve, chorda tympani or recurrent laryngeal. He might have recognized the "liver and lights" as old friends, but in an hepatic and pulmonary garb they were as strange to him as the "bones and sinews" when these became osseous and ligamentous. After an hour of jargon of this sort, he went to listen to another no less bewildering medley of atoms and molecules, crystals and salts, which were not salt. In my day, the Gordian knot of chemistry was not attempted to be untied. The chemical lecture was simply skipped, or if any youth were brave enough to try to learn by rote a few of the inorganic combinations of the common elements, he did not hesitate to draw the line at the organic compounds, which at that time did not rejoice in formulæ of C's, H's, N's and O's piled up in kaleidoscopic shapes as children make with building blocks. A third hour with another elementary branch, materia medica, only dazed him the more, by a set of nouns, adjectives and verbs entirely unlike those he had already heard. Was it strange he welcomed the relief from the Babel-tongued confusion afforded by the surgical amphitheater, where, if the blood-curdling operation did not cause him to faint, he felt assured he was born to be a surgeon, or he roamed with a crowd of others over a hospital ward and gazed curiously into pallid faces, or stupidly groped for the pulse in hot, emaciated wrists?

Two full courses of such a jumble of what are considered elementary branches, with a veneer of theoretical and practical medicine, surgery and obstetrics, the nominal dissection of a "part" or two, and a dangerously indistinct recollection of an operation or clinical demonstration, constituted the one time education of the physician. The making of doctors was a more or less profitable occupation, and the trade spirit, which rejoiced in machinery that turned out a larger stock than rival concerns, infused itself into these mill-products, which were themselves only tradesmen from the start to the very end of their careers. To these, all there was of medicine was the money-making art, and shrewdness in business methods, which led to acquired wealth, became the ambition, rather than eminence for profound learning, varied acquirements, and skill in diagnosis, treatment or prevention.

Until recent years, the archives of the medical examining boards of the Army and Navy furnished almost the only incontestable records of the ignorance and incompetence of graduates of medicine, and their occasional revelations were attempted to be discredited by the statement that only those physicians sought the military service, who could find no occupation at home. But the institution of State Boards of Medical Examiners, and the organization of county and municipal health boards, requiring accurate returns of vital statistics, developed the amazing and incredible extent of the illiteracy in the ranks of the profession. There are now in Illinois two graduates in medicine studying the three R's on probation for licenses to practice. Indeed, it has been found that not a few of the legally created M.D.'s were as discreditable members of the profession as the self styled "doctors"—many of the latter, in fact, possessing a native ability that made them superior to the graduate. I could occupy many hours with the recital of ludicrous examples by graduated physicians, who deliberately placed in writing the evidences of their astounding ignorance, but the mirth ceases, when you reflect that the day may come when the lives of your dearest relatives may be at the mercy of one such.

The argument against the legal interdiction of the license to practice medicine by uneducated physicians, on the ground that it is an interference with the inalienable right of an American citizen to follow any calling he sees fit, and in his own way, has been used to prevent the closure of the doors of medical colleges to uneducated matriculants, but a sufficient answer is that it is not possible for the average untutored youth to comprehend the teachings of the medical colleges of to-day, for though there have been John Hunters, who achieved the highest professional renown in spite of every early disadvantage, the phenomenal success of the one among many thousands does not justify those thousands of preventable sacrifices. Your own James Craig Watson, "whose name is known wherever an astronomer points his telescope to the stars," and who brought honor to his State and home, toiled till he surmounted every obstacle in his upward climb; but what higher peak might not he and others like him have reached, had they lost fewer hours of their brief lifetimes in this toilsome drudgery over the approaches to the unknown regions wherein they were to find future fame. The restrictions sought to be imposed are not in the interest of wealthy or aristocratic classes, since the University of Michigan announces as its annual fee "for Michigan students *twenty-five dollars*, for all others *thirty-five dollars*," and the Medical Department of the University of Texas starts out with professors whose official salaries range from $2,500 to $3,000, and who can consequently afford to be indifferent to the size and exacting as to the character of their classes; and this might be and should be the

case everywhere, were teaching faculties salaried, and examiners for degrees independent of them. Already "there are in the United States thirty-two examining and licensing boards that do not give instruction, and two in Canada."

The first step in the direction of reform in the methods of medical education was practically taken by the Committee on Medical Education of the State Board of Health of Illinois, which in 1880 reported in these words:

"It is too shamefully true that at present many students are admitted to the lecture courses whose illiteracy prohibits their profiting by the instruction given, except in the narrowest limits, and precludes the possibility of their attaining such knowledge as the duties of the profession positively demand.

"Natural talent and aptitude may go far toward fitting a man for any calling, but no talent can take the place of a thorough education in a profession where such large fields of knowledge are to be mastered, and so many and such important judgments are to be constantly and promptly formed.

"It is a palpable absurdity to expect to make skilful physicians of illiterate students by mere dint of reading them lectures, even when accompanied by quizzes and examinations."

This modest beginning of what was to become a mighty undertaking occupied only five pages of the Third Annual Report of the State Board of Health, and so was almost coincident with the establishment of the Board. The following year, the report of this same committee filled fifty-seven pages, and it has continued to increase in length and importance until the present year, when the seventh report of the committee has become a volume of 222 octavo pages, the most accurate, exhaustive and authoritative exposition of the status of medicine in the United States and Canada. From it we learn that there are 148 medical colleges in the United States, and of these 129 require certain educational requirements for matriculation, against 45 who did so in 1882.

It should be a matter of peculiar gratification to you in Michigan, that the Department of Medicine and Surgery of your University was among the first to raise the requirements for admission to its teachings, with unselfish disregard of its possible effect upon the number of its matriculants, and it is a matter for congratulation by your fellow-countrymen all over the United States to learn from the announcement of President Angell that, from this year, "it will demand a grade of preparation equal to that for admission to the scientific course in most colleges." Excepting the matriculants in course in literature, science and arts, and the graduates of literary colleges of good standing, and of a published list of diploma- and high-schools, every matriculant must be examined in English, presenting grammatical and rhetorical analyses of selections of prose and poetry, and an essay correct in spelling, punctuation and literary composition; in mathematics, as to arithmetic, and especially the metric system of mensuration, algebra and plain geometry; and in physics, botany, zoology, physiology, history and the elements of the Latin language. The list is so immeasurably ahead of what was, or rather was not, required, as to disarm criticism, but chemistry, and physical and descriptive geography and geology might well be added, to complete the equipment of the intending student of medicine.

Some of the prominent universities of the country, notably the University of Pennsylvania, Cornell, the Sheffield Scientific School of Yale, the College of New Jersey, Johns Hopkins, Northwestern University, and the University of Wisconsin have instituted special courses preliminary to the study of medicine and an attempt was made to establish a three years' course preparatory to the study of medicine at Ann Arbor. The scheme, unfortunately, did not succeed, but I understand it is proposed to establish a conjoined scientific and medical course of six years.[1]

The requirement of a proper preliminary education of medical students is not all that is necessary for the improvement of the personnel of the profession. Two annual courses of lectures, the second a repetition of the first, and the nominal tutorage of a preceptor once constituted all the didactic instruction which was considered necessary to make the most illiterate bumpkin learned in medicine, and during the fifty years from 1830 to 1880, but little progress towards higher medical education was made. Ten years ago, only twenty-two colleges required attendance upon three or more courses of lectures before graduation; to-day there are eighty-five, and the duration of the lecture terms has increased from an average of 23.5 weeks (in eight colleges the time was only sixteen), to 26.3 weeks, one hundred and eleven colleges having terms of six months or more, when in 1882 there were only forty-two. The Chicago Medical College was the first in this country to adopt, by a vote of the faculty on the 4th of June, 1868, the three years' *graded* course, but up to 1880 there were only nine colleges in the United States that had adopted it, while in 1890, the number had increased to sixty-two, and the American Medical College Association at its meeting in Nashville, in May, 1890, adopted as a rule, governing the admission of colleges to membership: "That they shall require a graded course of instruction covering a period of not less than three courses of lectures of six months' duration each before graduation."

The movement for higher medical education has not stopped with this. There are "thirty-four colleges that now, or will soon, require four years' study and three courses of lectures, eleven that will require four years' study, and four that will soon have four courses." The course of study recommended by the medical faculty of Harvard University covers four years, although the degree of Doctor in Medicine continues to be given upon the completion of three years' study, the Degree of Doctor of Medicine *cum laude* being conferred upon those, who may have obtained an average of 75 per centum in examinations after completing the four years' course. McGill University of Montreal requires attendance on lectures for four winter sessions of six months each and one summer session of three. In the Department of Medicine of the University of Pennsylvania the course is graded and extends over three years. A four years' graded course is earnestly recommended and provided for but not required, as is the case with the Medico-Chirurgical College of Philadelphia, the Woman's Medical College of Pennsylvania and the Medical Department of Northwestern University. It was the University of Michigan which, declares her

[1] I have been told that this has since been decided upon, the degree of B.S. being bestowed at the end of the second year, and that of M.D. at the close of the sixth.

president, "decided first of all the medical schools in the country, to make four years of medical study a prerequisite to graduation." The annual announcement for the current year indicates in detail the systematic arrangement of lectures, recitations and laboratory work for the two semesters of the four college years of nine months each, which are so graded that the more elementary branches and the practical subjects are first taken by the student, the more advanced branches and theoretical subjects being presented later, so as to secure, as far as practicable, an orderly succession of studies.

The repetitional course so long the custom, has had its day, when first, second and third course students sat side by side, and listened to the annual iteration of elementary facts and the old jokes about the *sternum* and the *os tincæ*, and saw the same old manikins and preparations at precisely the same period of the stereotyped course. They saw likewise the treasured specimens behind the glass doors of the museum cases, only a few privileged assistants to the professors ever handling the precious mysteries. Today, as you may read in the printed announcement of your College, the laboratory work required of every student, histological, physiological, bacteriological, electro-therapeutic, pathological, toxicological and pharmacological, must familiarize him by touch as well as by sight with every piece of the human mechanism, and with every agent and instrument that are ever brought in relation with it.

Doubtless others besides the twenty-one recalcitrant colleges that still require only two courses and have made no provision for longer study, are not in earnest in the cause of medical education and make such professions as they do, not in good faith, but the public will after awhile learn to distinguish between the sterling coin and its pewter imitation. "Possibly," says President Angell, with significant emphasis, "our numbers may for a time be reduced," and it is stated as a fact in the recent report of the Illinois State Board of Health, comparing the two periods of three years each of 1880–83 and 1883–86, that the most marked effect of the crusade against medical illiteracy was in Illinois, Indiana, Iowa, Michigan, Missouri and Ohio, which had 2,257 fewer students and 727 fewer graduates in the second than in the first period, although these States had gained half a million in population in the later triennium. In four States not so influenced, whose population had increased 833, 784 in the decade, there was an increase of 1,487 students out of a total of 3,020 for the whole United States, in which the gain in population was over 12,000,000.

The American Medical Association, the representative body of the profession, adopted in May, 1847, what is called the Code of Ethics, embodying the rules guarding the conduct of physicians towards each other, to their patients and to the general public, and appended with but little hope of their adoption, articles upon the reciprocal obligations of patients to physicians, and of the public to the profession in general. Much of the quaint phraseology of this instrument is like that of the great Master in Medicine, Benjamin Rush, and on that account commands our respectful attention. It declares, "The first duty of a patient is to select as his medical adviser, one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist, and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive."

And again: "The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualification, to make a proper discrimination between true science and the assumption of ignorance and empiricism, and to afford every encouragement and facility for the acquisition of medical education."

Consequently, the problem of medical education, besides the better instruction of the votaries of medicine, involves the enlightenment of the public as to what is Medicine. When some old spendthrift of his health fails to find relief from a long, ever-changing suite of medical advisers, the reproach is bandied, "For what are doctors good?" When at the end of a long career of toil, a retired physician exclaimed, "I am tired of guessing," captious critics reviled his life-work as all guess-work. When one who has outlived criticism is bold enough to say "I don't know," to an idle question as to the cause of some trifling ailment, he is contemned as ignorant and beneath the sciolist, who has a plausible pretext for everything. I fear that in the estimation of the public the medical man is little better than an artificer, who mends dilapidated human vessels, and that the chiropodist, the manicure, the bath-tender and the movement-curer, or to dignify them by higher sounding titles, the balneologist and kinesipath, are his noble brothers with offices scarcely higher, and this is partly the fault of the profession, which, with modest self-abasement, accepts the back seat among the audience instead of appearing upon the stage under the full glare of footlights and head-lights.

The betterment in methods of teaching medicine has not been brought about so much by outside causes as those inherent, for the public has not greatly concerned itself about the legitimacy of Doctor This or That. The spirit of progress in all science, which is characteristic of the Nineteenth Century, has possessed Medicine as all other departments of knowledge. The little oligarchy of six or seven professors, who ruled over as many kingdoms of medicine, have had their domains invaded by exploring vandals, who have enlarged their boundaries and set up new principalities, until now twenty to twenty-five is a moderate collegiate staff, thirty to forty not uncommon, and three famous schools, the University of Pennsylvania, Harvard and Columbia display respectively sixty-three, seventy-five and one hundred and six names of Professors, Emeritus Professors, Adjunct, Assistant and Auxiliary Professors, Clinical Professors, and Clinical Assistants, Instructors, Lecturers, Demonstrators and Assistant Demonstrators. Not even an academic lettered graduate in arts and sciences can hope to master all this diverse detail, of which parts only have been made their life-work by the brightest minds. As Art has its schools and masters of design and color, of landscape and figure, and Engineering has become only a family name for cousins innumerable, of which the youngest, electric engineering, promises to outstrip the rest; as Law has its votaries who walk within distant defined lines and limits; and even the followers of the lowly Saviour marshal themselves in unfriendly camps, so

has Medicine grown that great, that so many altars to *dii minores* have been set up, there is danger the great all-pervading spirit which makes of them a whole may be forgotten.

Thirty years ago, Professor Samuel Chew, in a course of lectures on Medical Education, declared that "a hospital forms a necessary part of medical instruction, and so necessary that without it no school of medicine can be even moderately well-qualified to do justice to its pupils." The University Hospital, whose formal opening we signalize to-night, is not only a material element of the scheme of education of this university, but it is the exponent of the excellence of that instruction.

The properly appointed, well-conducted hospital is a measure of the education and refinement of the community, as the thronged out-door dispensary is of its squalor and poverty. Troops of sore-eyed, pallid, emaciated women and children go to the latter for potion and salve, who most need bread and butter, milk and meat. There is little healing in the drops the poor mother's trembling fingers dole out to her suffering child, whose empty stomach and hungry blood are sorer evils than the sentinels of disease on body, limb and face. The hospital ward is both haven and heaven to the physically afflicted. Its inmate is the stranger treated as its guest—the *hospes*, whence its name, hospital—and its paronyms, "hospitable" and "host." The quiet room, the clean bed, the palatable viands, the gentle nurse, work wonders that drugs can not. An experience of many years in hospital administration warrants me in rating the dispensary as the least important of its appointments, the kitchen, the bath-room and the laundry all deserving precedence. The grimy skin often resumes its functions after the hot bath has removed its encumberment of dirt and disease. The nerves, jangled out of tune, cease their discordant impulses under the restful influence of quiet, and gentle sleep, the sweet, oblivious antidote to pain and suffering, comes often after the unaccustomed meal has given that wherewith the little body-builders of the blood may undo the evil the sufferer has done himself. The hospital is the home of the friendless, the porch of the church, from which they leave clean and clothed in their right mind, who entered foul and knowing not what they were impelled to do. There can not be too many of these blessed refuges for the lame, halt and blind, since, when well-administered, they place the sick of whatever class under the most favorable conditions possible for recovery; but no hospital can be well-administered without a large force of competent medical men, nurses and attendants, all of whom should be salaried with amply remunerative incomes. The hospital is not, in any sense, the rival or antagonist of the practitioner. Their lines are parallel, and far above the mercenary level on which the charlatan reaps his harvest. I cherish the Utopian hope that the physician of the future may be regarded as something more than a mere medicine-man; that he shall be what his name implies, the learned physicist—master in physics rather than physic,—profound interpreter of nature's laws, and skilled in the means for preventing their violation, whether by individuals or by States. The recognition of the importance of preventive medicine, and the prominence now given to hygiene at meetings of the national associations, in the local societies, and in medical journals; the fact that all but fourteen of the one hundred and forty-eight medical colleges now have chairs of hygiene, when ten years ago it was only taught with more or less thoroughness in fifty-two; the admission of its paramount position among the universal medical sciences by eminent writers and teachers; and the testimony of great operators and practitioners, on the eve of their retirement from half a century or more of work, that the prevention of disease is the crowning object of medical science, all encourage the belief that the day is at hand when the sanitary counsellor shall be a potentate in the community, as with the family and the individual, and a man of authority in the councils of city, State and Nation. The health officer of the city and the health board of the State are coming already to be regarded as dignitaries of the highest rank, and meriting the highest consideration, and ere long there is certain to be in the cabinet of every nation a Minister of Health, or of the Public Health, with functions as imperative as those of the Ministers of Education, Agriculture, Commerce, or Public Works. The requirement of a thorough preliminary education, and of a graded system of instruction extending over not less than four years, will certainly exclude pretenders, and reduce the number of undesirable students until the men who shall receive their degrees *cum summa laude* shall be adequate for the various health positions of the whole country, for the administration of the hospitals, their annexes and dependencies, and for all the legitimate demands of private practice. There need be no fear that the physician's occupation shall be gone. The topic of the day in France is its depopulation, and the nation is looking for its salvation to the sanitary authorities.

With a wider field of responsibility and influence, demanding higher acquirements, there will be need for an army of health officials, sanitary inspectors, medical advisers, specialist practitioners, college faculties and hospital staffs, and the hospital physician and surgeon, like his prototype, the doughty Knight Hospitaler of St. John, should lead them all in chivalry, fidelity and address—and I doubt not the Knights Hospitalers of Ann Arbor shall be among the most courtly and most valiant of the order.

There has, in late years, been an outcome from the hospital which has introduced into the home sick-room something of the orderly method and thoroughness of hospital routine. The *trained nurse*, in pretty cap and apron, with her quiet self-possession, is a sugar-coating of sweet enticing that makes the bitterest pill palatable. A very priestess of Hygeia, her soft touch, her gentle voice and sympathetic smile equally subdue the fretful child, the querulous woman and the whining man. This University Hospital must make its School for Trained Nurses one of its prominent features, before it fills the measure of good it will do to the community which is blessed by its existence in its midst.

Entertaining the exalted opinion I do of the study of medicine, an enthusiast in my idea of its beneficence and prepotency, I may be pardoned for recalling the long succession of profound thinkers in medicine from the mythical son of Apollo, the "blameless physician" of Homeric times, down to that "beloved physician" of the first century, whose two narratives addressed to the most excellent Theophilus have not yet lost "their power in purifying and enriching the life-blood of mankind," and thence to the men we all know, who have glorified humanity by their benevo-

lent and too often ill-requited labor. To them it has been given to penetrate the mystery of man's existence, to show how the wages of sin is death, to denounce the blasphemy of ascribing to God's will all the misery and disease which ignorance, indifference and neglect inflict upon the human race. It is not God's will which incites the misdoings of each human atom, magnified by self-conceit into a giant, who is bruised and crushed by the mighty laws he has set in defiance; not God's will that the vesicle, to be some time man, endowed with the Divine impulse through which the masterpiece of creation is to be evolved, shall be freighted with evil tendencies — the taints, the blots and blemishes which ancestors to the third and fourth and fortieth generations have inflicted upon it; not God's will that the new-born child shall come into a world where everything it needs, light, air, water, food, are unstinted, to find the light darkened, the air poisoned, the water polluted, the food perverted, by man's own heedless acts.

It is the part of the wise physician to see beyond the mist and gloom of physical defilement that better living in which healthy men and women enjoy that highest possible happiness of well-being, engendering offspring in their own images, to be themselves parents of future vigorous races, and thus fulfill the Divine Will which put man upon the earth as the final effort of creation. May this University be the school in which such wise physicians shall find the inspiration for their noble work, and this Hospital the field on which their proudest victories shall be achieved.

A CLAIM OF PRIORITY. ATTEMPT TO COMMUNICATE ARTIFICIAL IMMUNITY.

BY ALBERT S. ASHMEAD, M.D.,
OF NEW YORK.

The following paragraph appeared in the *Medical Record* (N. Y.), Nov. 14th, 1891:

"Various attempts have been made by Richet and Verneuil, to transmit to man the exemption from tuberculosis, by injecting the blood of animals exempt, or supposed to be so, for instance, dogs and goats. Following out this same order of ideas, Dr. Bordier now proposes to transfuse the blood of indigenous negroes into non-acclimated whites, who intend to live in tropical countries, as a prophylaxis against yellow fever. It is not said that this proposition has been followed by any practical experiment."

This proposition of Dr. Bordier, that is, a similar and more comprehensive one, was made by me in an article which appeared in the *Medical Record* (N. Y.), Jan. 10th, 1891. It was entitled, "Racial Immunity and Inoculation." I proposed in it to transfer immunity, not from animal to man, but from man to man. I mentioned specially Japanese immunity from scarlet fever, and the immunity of negroes from yellow fever. Either, said I, we shall obtain a modified lymph by inoculating the disease upon an exempt individual, or the transfer of pure blood will transmit the immunity.

In a subsequent article published in the same journal Sept. 5, 1891, and entitled, "Inoculation of a Japanese with Scarlet Fever Germs. An Attempt to Obtain a Modified Lymph to Prevent Scarlet Fever in the Caucasian." I published the results of an experiment which I was then making.

This question was submitted by me to M. de Quatrefages. In his reply, this gentleman said that he was himself unable to give an opinion upon the matter, but promised to submit the subject of my articles to the *Académie de Médiciné* where distinguished bacteriologists would examine, in a more competent manner, the merits of it.

As my correspondence with M. de Quatrefages took place before the proposition of Dr. Bordier is said to have been made, it is evident that the honor of having made it first belongs to me. I have claimed the recognition of this clear right of priority in a letter to the *Tribune Médicale*, of Paris, and also in a communication to Dr. Shrady, editor of the *Medical Record*.

I added, in both of these letters, that I had also transferred pure blood serum of a child who had had scarlet fever, and who, in consequence, enjoyed artificial immunity, to a child exposed to the disease. I was not, at the time, when I thus first mentioned my experiment, able to draw any deductions from my observations. But I have since transferred the pure blood serum of a boy who had had the disease two years previously, to his two brothers, actually exposed to the disease; these two children now, seven weeks after the transfer, are still intact.

These facts, although still incomplete and not allowing of a sure conclusion, I have had to mention, just because the merit of my proposition, whatever it may be, has been attributed to another man. I do not claim for them more importance than they deserve; but I do claim most seriously the priority of the idea which, made by me to the *Académie de Médiciné* of Paris, through M. de Quatrefages, was afterwards made again, at least in part, by Doctor Bordier, Professor at the *Academe des Sciences*, of Paris, and ascribed to him, as its originator.

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY DR. H. GRADLE.

LECTURE II.

In order to understand the importance of the various conditions underlying infection and determining its occurrence, let us review what is known of the struggle between invading bacteria and the resisting organism. The first problem to be answered is: how do parasitic bacteria injure the tissues?

Their mere presence as foreign bodies is indifferent. It is well known that insoluble powders are tolerated in the living tissues without reaction. It has furthermore been shown by Wyssokowitsch[1] that any bacteria not pathogenic to the animal experimented upon are deposited in different internal organs when injected into the blood, and that the deposited bacteria are killed within some hours by the tissues. We must hence conclude that microörganisms can damage the animals cells only by their chemical action.

The poisonous effects of bacterial cultures, in short, of putrid animal fluids, were shown by numerous researches in the earlier part of this century.

Various observers, especially Parnum, obtained extracts from decomposed material, freed from living bacteria by heat or filtration, and with these chemical substances produced in animals forms of septic

[1] Zeitschrift f. Hygiene, Vol. I, p. 1.

poisoning. But the fact *that the symptoms of a given disease can be reproduced in animals by poisoning with the chemical products of the specific bacteria of that disease* was first demonstrated by Pasteur in chicken-cholera. By injecting into the body of fowls broth in which the chicken-cholera bacteria had grown, but from which they had been removed by filtration, he produced the somnolence characteristic of that disease. The symptom was the result of a poison generated by the parasites in the living organism in the actual disease, but could be caused as well by the same poison when formed in the culture flask. Poisoning, however, by the soluble products is not infection. The living parasite multiplies in the infected body, while the chemical poison produces only an effect proportionate to the dose employed. The blood of the infected animal can convey the disease to other subjects, which the blood of the poisoned animal cannot do.

The first soluble poisons of bacterial origin which were identified chemically were the crystallizable nitrogenous alkaloids known as ptomaines. Brieger,[2] to whom we owe the most extensive work, has extracted about a dozen of these bodies from different putrid material. On extending his chemical researches to pure cultures of pathogenic bacteria, he obtained ptomaines, whose poisonous action resembled some of the characteristic symptoms of the diseases from the parasites of which they were derived. Thus typhoid bacilli yielded a ptomaine prostrating animals, while from tetanus bacilli several alkaloids were obtained which could cause convulsions, and from pus staphylococci he extracted cadaverin, a local irritant. He showed moreover that ptomaines could actually be detected in the infected tissues, for instance in tetanus.

The importance of the ptomaines in the explanation of bacterial action is, however, lessened by the fact that they can produce only some of the symptoms of diseases and not any of the characteristic morbid lesions. Moreover, the amount of ptomaines obtained from the culture of any pathogenic bacteria is in many instances not sufficient to account for the intensely poisonous action of the original culture fluid.

Our knowledge of the chemistry of bacterial poisons has been much advanced by the discovery by Roux and Yersin[3] of a substance entirely different from ptomaines in cultures of the diphtheria bacillus. It is a body of albuminous reactions and of a hitherto unknown intensity of poisonous action.

As this substance is rendered inert by heat and can be separated from its solution by its property of clinging to other precipitates, they classed it as a ferment. Their researches were confirmed by Brieger and Frænkel[4] in the case of diphtheria cultures, and extended with the result of finding similar bodies in cultures of tetanus, cholera, anthrax and typhoid fever parasites and of the pus staphylococci.

On account of the albuminous reactions of these poisonous bodies the German authors have termed them *toxalbumins*. The name "ferment" has been objected to because, unlike the well-known digestive ferments, their effect is proportionate to the quantity employed. As toxalbumins have since been obtained from cultures of the pneumo-coccus, the parasites of swine-plague, and various other bacteria, we must regard them as a common class of bacterial products.

Of all known chemical poisons toxalbumins are the most virulent. Thus Vaillard and Vincent have experimented with broth-cultures of the tetanus bacillus of such strength that a $\frac{1}{40000}$ of a milligram of the solid residue supposed to be the impure toxalbumin sufficed to kill mice.

The poisonous effects do not set in at once, even after intra-veinous injection, but there occurs a latent or incubation period lasting hours, and in the case of small doses even several days. But the poisonous effect itself persists also for days or even weeks when the minimum fatal quantity is used (in the case of the diphtheria toxalbumin). The symptoms vary with the origin of the toxalbumin and recall many of the clinical features of the corresponding disease. In tetanus, indeed, the course of phenomena is the same whether the animal be infected with the living bacilli or poisoned by a sufficient dose of their toxalbumin. These bodies will cause not only functional symptoms but also morbid lesions characteristic of the original disease. There is, therefore, all reason to believe that many of the disturbances produced by parasitic bacteria are the result of the toxalbumins which they secrete in the living body.

Besides ptomaines, toxalbumins and possibly other as yet unknown soluble products, bacteria possess chemical weapons locked up in a less soluble form in their own bodies. Buchner has shown that very many bacteria, after having been killed by heat and washed on a filter, are irritant to the tissues to a sufficient extent to cause suppuration. The bacterial body is evidently dissolved slowly by the animal juices and then poisons the tissues. By dissolving the washed bacterial cadavers in the test tube by means of prolonged boiling or weak alkaline fluids, solutions of albuminous reactions could be obtained possessing pyogenic properties. Such poisonous "bacterial proteids," as Buchner calls them, evidently constitute part of the body of the living parasite and as some of the parasites are disintegrated under the influence of the living tissues their cadavers aid the rest of the invading host in its attack. Koch's tuberculin evidently belongs to this class of proteids, as it is extracted from the bacterial mass by prolonged boiling. Another instance of an intense poison locked up in the body of the parasite has just been discovered by R. Pfeiffer[5] in the case of cholera cultures.

The *defense of the organism* against invading bacteria varies in degree in different instances. An active resistance can scarcely be said to exist in those cases, like virulent anthrax and septicæmia in rodents, in which the animal succumbs invariably and always within the same time. But whenever there is any tendency to recovery we must recognize that there is a struggle between the parasites and the host. For recovery means that the microbes have either been destroyed or eliminated after having been rendered harmless in some way or other. The highest degree of defense occurs in those instances where a given bacterial species, pathogenic to other animals, can not gain a foothold in an individual. This is termed natural immunity. It is well known, however, that immunity is also acquired after recovery from certain infectious diseases, so that the patient is not likely to contract that disease a second time in his life. But not all parasitic diseases are self-protect-

[2] Ueber Ptomaine, 1885 to 1887.
[3] Annales de l'Institut Pasteur, Dec., 1888, and June, 1889.
[4] Berliner klinishe Wochenschrift, No. 11 and 12, 1890.
[5] Zeitschrift f. Hygiene, Vol xi, p. 393.

ing. Yet in many instances in which clinical observation simply shows that an infection may occur again after a variable length of time, experimental analysis has proven that a transient period of immunity does exist. In erysipelas artificial reinoculation of a patient has failed up to three months after the last attack (Fehleisen), and in pneumonia Klemperer detected in the blood the chemical conditions conferring immunity for at least several weeks after the crisis.

Indeed, acquired immunity does not necessarily last a life time. When we test the immunity against small-pox by re-vaccination it is usually found that the susceptibility begins to return after the lapse of some seven years.

Immunity can vary in degree. This fact, which the accidental observation of the clinicist could not have revealed, was brought out by experimental researches of Pasteur. On learning that the virulence of parasitic bacteria can be modified by their mode of culture he also determined that the degree of immunity following recovery from inocculation of the enfeebled parasite varied with the attenuation of the virus. Infection with a feeble virus can confer immunity only against comparatively weak parasites, while the animal may still succumb to the same microbe in a state of greater virulence. But by repeating the inocculation successively with bacteria of increasing virulence, and thus submitting the animal to several successive infections, a degree of absolute immunity is ultimately reached. These fundamental facts first discovered by Pasteur in the case of chicken cholera have since been found to hold good in all self-protecting diseases tested experimentally. The principle of protection against a disease dangerous to life by inducing a harmless infection by means of a mitigated virus, has been practiced on man since Jenner's discovery of vaccination. It is only in recent times, however, that the identity of the virus of small-pox and cow-pox has been definitely proven.[6]

The attenuation of bacterial virulence for the purpose of protective vaccination can be accomplished in various ways, and any one method is not necessarily applicable to different diseases. The bacteria of chicken cholera were enfeebled by Pasteur by keeping them in the unchanged culture broth for months in the presence of oxygen. Anthrax bacilli were found to lose their virulence progressively by cultivation at high temperatures (Pasteur), or the addition of antiseptic chemicals to the soil (Roux and Chamberland), or by the influence of compressed oxygen (Wosnessenski), while the bacilli of symptomatic charbon were changed into a safe vaccine by a heat just below the thermal deathpoint (Arloing, Cornevin and Thomas). Another mode of diminishing the virulence of some parasites is to pass them repeatedly through the bodies of some animal species, different from the one they habitually attack. This was done by Pasteur in the case of the disease of swine known as "rouget," and the same method has been used by Voigt and by Eternod and Hacciers in converting the virulent small-pox virus into harmless cow-pox vaccine.

Immunity can also be induced by infecting animals with bacteria of full virulence but in a number minimal enough to be overcome by the organism. Emmerich claims to have done this with the pneumo-coccus in the very susceptible rabbit, while Chauveau had formerly rendered Algerian sheep, by nature partially immune against anthrax, absolutely refractory in this manner.

At the present day the most interest, however, centers in the attempts to confer immunity not by actual infection with a mitigated parasite, but by protective injection of the chemical products of bacteria. Success in this line was first claimed by Salmon and Smith, who stated that they had rendered pigeons immune against the virus of swine plague by previous poisoning with sterilized cultures. The accuracy of this statement has since been questioned by Selander[7] as far as pigeons are concerned, although in rabbits he did produce such results. Successful chemical vaccination however, has been accomplished in a precise manner by Chamberland and Roux in symptomatic charbon and malignant œdema, by Roger in the disease produced in rabbits by the bacillus of blue pus, by Hankin in anthrax, by Fraenkel in diphtheria, by Tizzoni and Cattani in tetanus, by G. and F. Klemperer in pneumo-coccus poisoning. The special substances in the bacterial cultures which confer immunity are of an albuminoid nature. But in the two instances which have been investigated, viz.: diphtheria and pneumo-coccus cultures, they were not identical with the tox-albumins. The broth in which the bacteria had grown lost its poisonous properties by heating for one hour up to 60° C., but retained the faculty of rendering animals immune. Boiling, however, destroys the substances in question.

The state of immunity, in whatever way it be obtained, is not produced until after the lapse of a number of days. Both infection with mitigated virus and protection with chemical vaccines bring about changes in the organism which require from 4 to 14 days for their completion. Prior to that time the animal is not protected against renewed infection.

In the struggle of the organism against the invading bacteria the latter are killed to a great extent whenever the animal system triumphs. This fact has been proven in many experimental instances. How can we account for the victory of the organism?

It has been shown that fresh blood and serum and tissue juice possess certain germicide properties. But since these are only transient, and since animal fluids are otherwise a favorable soil for bacteria, this peculiarity could only be demonstrated in the following way: Bacteria taken from a living culture are introduced into a test tube of fresh serum, and the number of germs in a drop of the serum is then determined at once and again at intervals of hours by means of plate cultures. It was thus found that the number of living germs was diminished during the first few hours, and that when not too many bacteria had been added they were all destroyed. But this germicide influence ceased after some six hours, and any bacteria that had escaped could now multiply unhindered. The germicide property seems to depend upon the presence of certain unstable substances which are rendered inert by any physical or chemical influences affecting the constitution of albuminoids. These germicidal albuminoids are apparently consumed in their action upon bacteria, for only a certain number of bacteria can be destroyed by a given quantity of blood and if the bacteria are in excess some of them escape destruction. These substances, moreover, are not poisonous to all bacteria

[6] By Voigt in 1882, and since confirmed by Eternod and Hacciers in 1890.

[7] Annales de l'Institut Pasteur, Sept. 1890.

but are *specific* in their destructive influence upon certain parasites only.

There are differences in this respect in the blood of different animals. Human blood has been found by Stern to be destructive to cholera bacteria and less so to the typhoid bacillus. It arrested the growth of, but did not kill diphtheria bacilli, and exerted no damaging influence upon anthrax bacilli and staphylococci. The most potent germicide influence is exerted by rat's serum upon anthrax bacilli, equalling in this respect a 2 per cent. solution of carbolic acid (Behring). It is of interest to note in this connection that the rat is very, but not absolutely, refractory to anthrax. The view suggested by this fact that the germicide property of the blood plays a rôle in the defense of the organism, is borne out by the observation that bacteria like the staphylococci which can exist as blood parasites, are not damaged by fresh blood. On the other hand, those microbes which cannot thrive in the living blood vessels like typhoid, diphtheria and cholera bacilli, are the most readily killed by the extra-vascular blood of most species. The relations of the germicidal properties of the blood to immunity are also suggested by several striking observations on the difference in the behavior of the blood before and after protective vaccination. Thus Behring found that the so-called vibrio of Metschnikoff which grows readily in the blood of normal rabbits could not grow in the blood of vaccinated animals. Charrin and Roger noted the same difference in the serum of rabbits as regards its effects upon the bacillus of blue pus before and after the animal had been rendered refractory, and Roger showed this to be true also of the entire tissues of the guinea pig as a soil for the bacillus of symptomatic charbon. Yet this chemical action of the tissues and the fluids upon those bacteria, which do not kill the animal, cannot be demonstrated in all cases. In fact no such effect has been found in anthrax and pneumo-coccus poisoning and other instances of non-fatal infection, with mitigated virus. The organism must, therefore, possess other means of defense besides the existence or formation of soluble "defensive" albuminoids.

Warfare against invading bacteria is also carried on by the white corpuscles and other mobile cells of the body. These facts, on which is based the "phagocyte theory" of defense, have been demonstrated mainly by the labors of Metschnikoff. He had observed that in a parasitic disease of a transparent species of water fleas, the infecting fungus cells were devoured by the mobile cells of the animal and apparently destroyed by them. Bearing in mind that leucocytes play an important rôle in the absorption of any solid particles or tissue-remnants, Metschnikoff then extended his observations to many and varied instances of infection in higher animals. He has thus learned, that in all infections where the parasites do not at once overwhelm the animal, the bacteria are ultimately engulfed to a large extent by wandering cells. If the animal recovers, the bacteria which are not thrown out of the system are killed and disintegrated in the interior of the white corpuscles, while in the fatal instances the parasites either poison the cells which devour them or in the more overwhelming infections no phagocytosis occurs at all. Buchner has since shown that the stimuli which attract the leucocytes to the attacked spot, are the proteids of the bacterial bodies.

The facts on which the phagocyte theory is based have been extensively confirmed. But it is yet an open question whether all bacteria are taken up by animal cells, or whether most of the parasites are not destroyed by extra-cellular chemical influences. Even if we admit the significance of the phagocyte theory, we must not overlook that the cells must act chemically on the parasites which they engulf. And if we regard, on the other side, the chemical theory of defense we must remember that the fluids of the body are secreted by living cells. There is hence not an absolute contradiction between the phagocytic and the chemical theories of protection.

A further insight into the nature of immunity was gained by researches made simultaneously in Japan by Ogata and Jasuhara, and in Berlin by Behring and Kitasato. It was learned that in certain instances, animals which have been made immune against specific bacteria have been thereby rendered refractory to poisoning with the chemical products of these parasites. These facts first determined in anthrax, tetanus and diphtheria, have since been found true also in pneumo-coccus poisoning. The tolerance to the tox-albumins of the diseases against which the animal has been vaccinated, depends on the presence of albuminoid substances in the blood which unite chemically with the tox-albumins, and render them inert. These protective albuminoids, or "anti-toxines" as they have been termed, do not exist in the blood of susceptible animals, but are formed in consequence of protective vaccination. If the blood of an immune animal or the isolated anti-toxines are added to a sterilized culture of the corresponding bacteria the mixture is no longer poisonous to normal animals. The action of the anti-toxines is, however, strictly specific and limited to the poisons of those bacteria under the influence of which they were formed in the body.

The quantity of anti-toxines produced in the vaccinated system corresponds to the degree of the immunity. This relation was elegantly demonstrated by Ehrlich[8] in researches on certain tox-albumins not of bacterial origin. From the castor bean, and from the jequirity bean albuminous bodies have been extracted which resemble the bacterial tox-albumins in chemical and physiological properties as well as in their extreme toxicity. Ehrlich found that a gradual administration of these poisons in harmless, but increasing doses resulted in tolerance of the system to their presence in large amounts. The degree of immunity, which would permit the protected animal to recovery from the ordinarily fatal quantity he stated numerically as immunity = 1. By continuing the experiment for weeks and months the animal could be made tolerant to ten times the minimal fatal dose, which he called immunity = 10, and by persisting, an immunity = 400 or exceptionally = 1000 could be obtained. The animals thereby became refractory both to the systemic poisonous and the locally irritant effects of the agents. The immunity in these cases depended likewise on the formation of anti-toxines in the blood and it could be demonstrated by experiments in the test tube that the degree of immunity was proportionate to the chemical power of the blood to neutralize the tox-albumins.

The neutralizing property of "immune" blood can be made use of in giving immunity to other susceptible animals. It is not necessary to mix "immune" blood with the poisonous bacterial culture in the

[8] Deutsche Med. Wochenschrift, No. 32 and 44, 1891.

flask but both can be injected into the susceptible animal in separate localities and *even at separate times*. The protective anti-toxines persist not only in the body of the animal in which they were originally generated but also in the system into which they have been introduced experimentally, at least for days and weeks. But in order to get efficient protection against infection or poisoning with bacterial products we must either employ a sufficient quantity of blood from a previously vaccinated animal, or we must get the blood from an animal with *a high degree of immunity*. The question comes down to a mathematical dosage in the light of Ehrlich's researches.

The injection of anti-toxines will not alone *prevent* infection but it may even *cure* it, if it follows the infection within not too long an interval of time. This has been demonstrated on animals by Behring in diphtheria, Behring and Kitasato in tetanus, and by G. and F. Klemperer in pneumococcus poisoning, and by Emmerich and Fawitzki in pneumonia and swine-disease (rouget).

It is beyond the scope of a discussion on etiology to enter into the details of these most important studies, but no physician can fail to grasp their far-reaching significance. Based on these researches there are to-day on record *four cases of tetanus in man cured* by the administration of *anti-toxine* from the vaccinated dog.[9]

In a disease of even greater importance, viz., acute pneumonia, the attempts of G. and F. Klemperer[10] to cure by means of serum obtained from the vaccinated rabbit, were crowned with a result in six instances, which if not absolutely convincing in this affection, so capricious in duration, was at least highly suggestive of future success.

The importance of these truths must not be imperiled by hasty generalization. Anti-toxines are not the rationale of immunity in every disease. In the experimental infections produced by the vibrio of Metschnikoff, the bacillus of blue pus and the bacteria of swine plague, it has been found that the animal rendered immune against the parasites by protective vaccination is still susceptible to the poisonous action of the bacterial culture. Naturally immune animals also do not seem to owe their insusceptibility to anti-toxines. Thus Roux found the chicken refractory by nature against tetanus, but its blood contains no tetanus anti-toxine, although this is produced on injecting the tetanus poison into its system. Moreover, even in those instances in which the recovery of an infected animal depends on the development in the body of an anti-toxine, which protects the system against the bacterial poison, other agencies besides must be at work in the subsequent destruction of the parasites. For anti-toxines combine only with the chemical poison, but do not kill the living bacteria.

THE late Dr. Buckminster Brown, of Boston, has recently bequeathed $40,000 to the University of Harvard, for the foundation of a professorship of orthopædic surgery, to be called by the name of the testator.

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[9] Schwartz—Centralblatt f. Bakteriologie, Vol. X, No. 24. Gagliardi, quoted by Schwartz. Pacini, abst. in Brit. Med. Journal, Jan. 23, 1892. Epitome, p. 15. Finotti, abst. in Brit. Med. Journal, Feb. 6, 1892. Epitome, p. 23.

[10] Berliner Klin. Wochenschrift, No. 34 and 35, 1891.

REPORT OF THE SURGICAL CLINICS.

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College.

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(*Continued from page 354.*)

November 29, 1890.

FRACTURE OF THE NECK OF THE FEMUR.

This man fell from the top of a caboose in a railroad collision some time ago, and sustained an injury in the vicinity of the hip-joint. When he came in the hospital, we found the right leg rotated outwards, shorter than the other, and the foot everted. The latter symptom would point to a fracture of the femur; the shaft may be fractured, but that was excluded by not finding a false point of motion, hence we came to the conclusion that it was a fracture of the neck. Another symptom of fracture of the neck we find, is that the trochanter describes a smaller arc when rotated; for the reason that its centre of motion is the seat of fracture, while in the normal condition it is the acetabulum. Another symptom is that the trochanter major, when the fracture is extra-capsular, becomes broadened and enlarged. This sign becomes more apparent some time after the fracture. We have all the signs of an extra-capsular fracture here in this case, viz.: age, direct violence, callus and shortening. The sound limb now measures 35 inches and the injured limb 34⅜ inches, which is considered a very good result; a shortening of only ⅝ of an inch. When in an oblique fracture you get a shortening of not more than ½ to ¾ of an inch, it is a very good result. The treatment in this case has been the extension apparatus by a weight and pulley, and the foot of the bed elevated, which was done to overcome the longitudinal deformity.

Continuous weight, and not the heavy weight, is the best for extension. The rotatory deformity or eversion is overcome by laying large sandbags along the outer side of the leg, and to obtain this result in this case we used the splint invented by Dr. Frank Hamilton, of New York.

FRACTURE OF THE FEMUR.

This man was hurt yesterday. While walking over a scaffold, he fell a distance of 40 feet, fracturing the lower jaw and falling on his feet, fracturing the femur. I find a fracture of the body of the inferior maxilla into several pieces. This is a very difficult fracture to keep in position. The ordinary way of treatment is to put on a pasteboard splint and apply a Barton's bandage, but a serious objection to this bandage is that it pulls the jaw backwards. Dr. LeMoyne, of this city, applies a dressing with adhesive plaster, which I like very well. It consists of a strip of plaster applied under the jaw, and the two ends fastened on top of the shaved head. I will apply it in this case. There will be no difficulty in feeding him, because his front teeth are out.

You will now please notice the position of this limb; it is abducted and rolled outwards. By measurement I find the sound leg 33 inches in length, and the injured one 31½ inches—a shortening of 1½ inch. I raise the limb, and by gentle manipulation I find a false point of motion at the middle third of the thigh.

The displacement of the upper fragment in fracture of the shaft is forwards, by the action of the

psoas and iliacus. The limb is shortened by the lower fragment being drawn upward and backward by the action of the rectus, biceps, semitendinosus and semibranosus.

Formerly the treatment of fractures of the femur was done by the double inclined plane, to relax the muscles. Experience has proven that all fractures do best in straight splints.

The manner of extension now employed is made by the weight and pulley, fastened to the leg by adhesive plaster, and by raising the foot of the bed for the counter-extension. To Dr. Gordon Buck we are indebted for this method of making extension.

The old method was accomplished by a long splint and a perineal band, which greatly annoyed the patient and irritated the parts, causing ulceration and sloughing.

When plaster is applied to the skin, the mole-skin plaster should always be used, because the ordinary rubber plaster usually blisters the skin. Fultman's slide is an apparatus that is much used in Germany, and which I have found to give good satisfaction. The leg is bandaged to the sliding part and the foot to the footboard, which prevents its eversion. This rests on a track, or slide, and the weight is applied.

FRACTURE OF THE FEMUR ABOVE THE CONDYLES.

This old gentleman sustained a fracture of the femur just above the condyles, some time ago. Bony union has now taken place, and he is able to bear his weight on it; but the lower end of the upper fragment is pushed down to the patella, and I find by measuring that there is over an inch of shortening. The union is perfect; but I simply show it that you may see what little negligence will cause a deformed union.

AMPUTATION OF FINGERS.

This gentlemen is a railroad brakeman, who had his left hand smashed between the drawheads about a week ago, while coupling cars. It is a case of Dr. McCann's, and, I believe, requires the amputation of some fingers. Had it been possible to tell at the time of the accident how much of the hand would be useless, Dr. McCann would have removed it, and thus saved him a week's suffering; but he used conservatism in this case, and tried to save as much of the hand as possible. It can only be determined in a week or two, in such injuries, which is living and which is dead tissue. This hand has my friend, Prof. McCann's, favorite dressing applied, namely: iodoform, which reminds me of the stanza:

"You may break, you may shatter the vase if you will,
But the fragrance of the roses lingers there still."

I find that the middle finger is dead, and the metacarpo-phalangeal joint is opened. In amputation of the fingers or toes, it is best always to make your flaps from the palmar and plantar surfaces, but in this case we are obliged to obtain the flap from the back of the hand. I have now amputated the index and middle fingers at the metacarpo-phalangeal joints; the ring finger at the joint between the proximal and middle phalanges; and the little finger at the joint between the middle and dictal phalanges. This hand will now have the antiseptic dressings applied, and the patient put to bed.

December 6, 1890.

TREPHINING FOR EPILEPSY.

Gentlemen, we have here this morning a very interesting case.

This young man, Robert Bierer, æt. 19, when 7 years of age, was struck on the head with a horse-shoe accidentally, by an older companion who was using horse-shoes for pitching quoits. Shortly after this accident, the boy fell from a hay-mow and sustained a wound near the other, over the right parietal bone. When he was 12 years old, he began to develop epilepsy, having paroxysms at long intervals then.

He was admitted to the hospital on October 13, 1890, and was then having fits almost every day. They would occur in the morning immediately after arising from bed. After his admission here, he was given bromide ammonium, gr. 15, and ext. belladonna, gr. $\frac{1}{16}$, four times daily. This for a time did much good, lessening the attacks considerably; but they are now getting more frequent again.

Epilepsy is a condition characterized by paroxysmally losing consciousness and having convulsions. To have a real case of epilepsy there must be, first, a sudden loss of consciousness; and second, convulsive movements of some parts of the body. The most common form is idiopathic epilepsy, which occurs at all ages, but more frequently at the age of puberty. Epileptic attacks in which the convulsions are slight, constitute that form which is called mild epilepsy, and by French writers *le petit mal*. The common form, with general convulsions, and the more grave of the two forms, is called *epilepsia gravior*, or *le grand mal*.

It is a very frightful sight to witness an attack. The patient is taken suddenly, falling as if from a blow, and before falling gives issue to a peculiar cry, which once heard is never forgotten. The patient always falls forward, hence called by some "falling sickness." He loses consciousness and then is thrown into a tonic spasm, which soon becomes clonic.

The sterno-cleido-mastoid is sometimes contracted, drawing the head to one side. The tongue is sometimes caught between the teeth, and is wounded by the tonic contractions of the muscles of the lower jaw. The pupils are dilated; there is stertorous breathing. The masseter muscles are convulsive and foamy saliva, commingled with blood, dribbles from the mouth. The paroxysms continue for a period from one-half to three minutes, when the patient gradually passes out of this state, opens his eyes, looks around confused, and it is some time before he knows where he is and answers to questions. As many as one hundred paroxysms may occur in twenty-four hours, or they may occur as seldom as once in five or six years, depending on the gravity of the disease.

The pathology of this disease is not understood, except when caused by intracranial lesions, as tumors, syphilitic affections and fracture of the cranium. Some irritation of the brain, cord or peripheral nerves is a cause of some of the cases. A very common cause is some trouble of the genito-urinary apparatus—for instance, phimosis, which can easily be cured by circumcision. Stone in the bladder is a supposed cause, also. When due to traumatic causes, causing pressure on the brain by a depressed fracture of the table of the skull, or spicula of bone, trephining is the proper thing to do. Even an injury to the scalp has caused the disease, and been cured by removal of the cicatrix of the scalp.

It is a question whether in this boy's case it is idiopathic or traumatic. Medication has been faithfully tried in his case with no good results, and

hence we are justified in opening the skull and searching whether a spicula of bone is pressing on the brain. Injuries or irritation over the parietal bone are the most liable to cause this disease; injuries in this vicinity are over the fissure of Rolando, which separates the ascending frontal and ascending parietal convolutions of the brain.

There are a number of methods of determining on the scalp the position of the fissure of Rolando. The most simple one, I think, is that of Mr. Hare, who, by a number of experiments, finds the upper end of the fissure can be determined by measuring from the glabella over the top of the head to the inion or external occipital protuberance; then the point one-half inch posterior, to the point midway between the glabella and inion would mark the upper extremity of the fissure of Rolando. This point being marked, if a line be drawn downwards and forwards at an angle of 67½ degrees, it will give the upper two-thirds of this fissure.

Mr. Horsley has devised to fix this important fissure, a strip of stout paper with a second strip fastened to its middle at an angle of 67½ degrees. The long median strip is marked by a scale of quarter inches, both backward and forward, and Dr. Morris J. Lewis suggests that the zero-point of which, between the two scales, should be half an inch in front of the second strip. Then by placing the long strip in the median line of the head, so that the figures of the scale are the same at the inion as at the glabella, the second or lateral strip will then mark the upper two-thirds of the fissure of Rolando.

In this case we will not hunt for this point, but will trephine at the point where the scar is. In operations of this kind, the strictest antisepsis should be observed. The motor centres are localized in the ascending frontal and the ascending parietal convolutions. This boy's convulsions are unilateral; it is a desperate condition, because such a boy or man is not fit for many occupations, as a carpenter or mason, for instance, on account of the danger of falling.

Epilepsy is one of the diseases often feigned by malingerers. Soldiers are a class that often simulate it to escape duty. To determine such a case, it must be observed if there was a cry previous to the fall; if the fall be forward on the face; if the pupils are dilated and insensible to light; if there is foaming at the mouth; if the tongue is bitten.

Persons with this affection may fall on the street and be arrested and taken to the lock-up for being drunk, much to the chagrin of the poor unfortunate and his friends. There is not much to be done during the attacks, but to put something between the teeth to prevent biting the tongue, and turning the patient on his side so that the tongue falls forward and does not obstruct the breathing; for the same reason the tongue is pulled forward when anæsthetizing a patient.

Of the various remedies administered for this disease, those of most repute are: the preparations of silver, especially the nitrate; oxide of zinc, belladonna, and bromide of potassium.

Brown-Séquard's mixture, which is a very noted remedy, is as follows:

℞	Potassii iodidi,	8 parts.
	Potassii bromidi,	8 "
	Ammonii bromidi,	4 "
	Potassii bicarb.,	5 "
	Inf. Columbo,	360 "

Sig.—One teaspoonful before meals and three dessertspoonfuls on going to bed.

The objection to the use of nitrate of silver, when used for any length of time, is the coloring of the skin to a permanent blueness. To prevent this, the remedy should be intermitted at times.

The boy being now anæsthetized, I will begin the operation; the head, as you see, is shaved; I make a curved incision down to the bone, the curve being downward so that the wound will drain well when closed. The different forms of making incisions of the scalp for trephining are the crucial, the horse-shoe shaped and the T incisions.

The scalp is very vascular, and consequently there is considerable hæmorrhage. After turning up the scalp, I control the hæmorrhage. Now I raise the pericranium at the point where the trephine is to be applied, and it feels as if there was a depression there. I now proceed slowly and carefully, and from time to time testing the depth made by means of a tooth-pick. I have now removed the button with an elevator.

I don't find any spiculæ of bone here, but it is necessary to search around the trephined opening as far as you can without doing any damage, because spiculæ are sometimes at some distance from the place indicated by the scar on the scalp; but I fail to find any.

Some surgeons would open the dura mater, but as there is no evidence of anything underneath it, I will not open it, because it would very much more endanger the boy's life. In some cases the button of bone is put in its place again, and sometimes it is broken up into fragments and placed back, but in this case, where we desire to relieve pressure, it is better not to put it back. Irritation about the genital organs is the most common cause of epilepsy, due to peripheral irritation outside the brain. I have not questioned this boy myself, but I am told that he practices masturbation some, hence that may be the cause. I insert a drainage tube, and close the wound with wire sutures. It will be dressed antiseptically, and I will report to you the result.

December 13, 1890.

Gentlemen:—You remember this boy on whom I performed the operation of trephining. He has had no paroxysms of epilepsy since the operation, which is as long as he has ever gone without a convulsion. It is, however, too soon yet to predict a cure. You notice how well the scalp wound has united; we have about secured union by first intention. You remember the trephine was applied over the fissure of Rolando, on the right side, because that is the center of motion, and that was also the position of the injury he had received when seven years of age, by being hit with a horse-shoe. You notice there is no suppuration whatever, which proves that antisepsis has been thoroughly carried out.

I will bring him before you from time to time and show you the improvement in the case.

OPERATION OF TREPHINING IN CONVULSIONS.

This man, Robert Lloyd, æt. 23, a millman by occupation, has always been a healthy man. Three weeks ago he was hit on the right side of his head with a poker, making a scalp wound, but no depression could be felt. Since that he has been having convulsions every day, and has had as many as twenty-four convulsions in twenty-four hours. He has no loss of motion, although he complains of

numbness of his left side. There is paresis of the right internal rectus muscle, causing strabismus; the pupils are unequal. This wound points to a lesion over the middle frontal convolution about the middle of the fissure of Rolando.

There are different methods of marking the line of the fissure of Rolando, which I explained to you at our last clinic.

In this case I measure from the glabella or the elevation between the eye-brows, back over the head in the median line to the external occipital protuberance, which I find is 12 inches; one-half of this distance is 6 inches and one-half inch posterior to the middle marks the upper extremity of the Rolandic fissure, which I mark with tincture of iodine. It is my habit to cut out a stiff piece of paper with a scale of inches marked thereon, and having the inches marked toward the two extremities of the paper from the middle of it, or zero. To this paper is attached an arm, one-half inch posterior to its middle or zero, which projects downwards and forwards at an angle of 67½ degrees and which arm shows the position of the upper two-thirds of the fissure of Rolando. I apply my paper here and mark along the arm with tincture of iodine.

This patient was sent here by Dr. Clark and admitted to the hospital four days ago. I propose, today, to trephine over the middle frontal convolution and the fissure of Rolando. We may find a spicula of bone or clot of blood, but if we find nothing we may still relieve pressure and thus benefit the patient.

A year ago we had a young colored man here in the clinic, whom some of you saw. He fell from a height while carrying brick and injured his head, causing paralysis of the right side of the body. He lay for ten months helpless on his back, getting a number of bed-sores and was indeed in a pitiable condition. I trephined the skull before the class and removed a cyst. In 24 hours he was able to move his leg and in two weeks after the operation he walked into this amphitheater. This was one of the most remarkable cases I ever heard of.

The patient being now anæsthetized, I will make a T incision here so as to get down to the skull where the wound was inflicted as well as to reflect the scalp over the Rolandic fissure. I remove the pericranium under the point of the scalp wound, but find no fissure or depression there, hence we will go near the Rolandic fissure. Care must be taken not to go too near the median line with the trephine, for in that region you may injure the longitudinal sinus.

I apply the trephine and have now removed the button of bone. It will always be your duty to search around the opening made by the trephine, with a flat probe, for it has been found in some cases that spiculæ of bone are, sometimes, at some distance from the point of injury. I find no spicula of bone and the dura mater is about the normal color, with the exception of being slightly injected.

I do not see sufficient reason to go through the dura mater and hence will put up the wound with the hope that we will do him good by relieving pressure.

I insert a drainage tube along both incisions of the Y incision so as to obtain thorough drainage. I sew it up with continuous sutures; these sutures should not be used unless you provide for draining the wound well, because they will not allow the escape of fluids.

I apply the antiseptic dressing and bind them on with a four-tailed bandage. We will see what benefit, if any, is to be derived from this operation in two or three weeks, and if no benefit is derived we will then consider the advisability of opening the wound and going through the dura mater.

OPERATION ON A CRUSHED HAND.

This man while coupling cars two weeks ago had his right hand crushed, and it is one of those very frequent accidents that we see here. Some surgeon had charge of this case and had made an attempt to save the hand. He was sent here yesterday, when I first saw it. My custom is to remove at once the parts that are to be lost and if that had been done in this case it would have spared him a great deal of pain and suffering.

As the first phalangeal joint, only, is crushed, I could amputate it at the middle phalangeal articulation, but the stump thus left would not be of any use and would always be extended because there is no special flexor tendon for the proximal phalanx, hence it is better to go at once to the metacarpo-phalangeal joint in such cases in the middle fingers; but in the fore-finger I would always preserve as much as possible, even a part of a phalanx so as to afford more opposition to the thumb.

While an assistant compresses the radial and ulner arteries, I will amputate the finger at the metacarpo-phalangeal articulation. I will do it by the oval method, commencing the incision on the prominence of the knuckle, on the back of the hand, and extending the incision obliquely downwards between the fingers and through the web across the palmer surface of the finger and obliquely upwards to the point of commencement. It is then disarticulated by cutting the lateral ligaments. I now put in a drainage tube and sew up the flap with continuous sutures. This hand will be dressed in the usual manner, with antiseptic dressing. In addition to the unnecessary suffering this man has had by delay in amputating, he also run the risk of contracting septicæmia.

A word in regard to anæsthetics: In this hospital we generally use the "A. C. E. mixture," which is recommended by the American Medical Association. It is composed of alcohol one-sixth, chloroform two-sixths, and ether three-sixths. We have never lost a patient on the table, although ether may kill a patient in two or three days after its administration, if affected with Bright's disease.

There is no doubt but that chloroform, when carefully and properly administered, is as safe as ether. It is more pleasant and prompt in its action and produces much less vomiting. It is considerably used for young children and in obstetrical practice.

December 20, 1890.

DISLOCATION OF THE HUMERUS.

Gentlemen: I want you to notice the right shoulder of both these men before you. The one slipped and fell on the sidewalk four weeks ago, striking on the upper part of his arm. He went to a physician, as he states, who anæsthetized him, manipulated the arm, and gave him something to rub on it. The second man fell on one of the streets of this city on the day after Thanksgiving. He felt some trouble in his shoulder some time afterwards. What do you see at the shoulders of these two men? You see the prominence of the acromion process, flattening of the shoulders, and so forth.

Let us now take up the symptoms of dislocation of the shoulder in a systematic manner. The symptoms are subjective and objective. The subjective symptoms which are the signs of dislocation, we have in both these cases, and they are the same as in fractures, viz.: History of the accident, pain, and loss of function. The objective symptoms common to all forms of shoulder dislocation are: flattening of the shoulder, prominence of the acromion, depression immediately beneath the acromion, the presence of the head of the bone in a new situation, deformity, Dugas' test, and Callaway's test.

The four principal varieties of luxation of the humerus in the order of their frequency are: 1. Subcoracoid; 2. subglenoid; 3. subspinous; and 4, subclavicular. The dislocation of the shoulder is the most common one in the body, and it is said to occur as frequently as all the other dislocations combined.

In the first form, the head of the bone is found beneath the coracoid process; this is the most common form of luxation of the shoulder joint. In the second form, subglenoid, the dislocation is downwards into the axilla, the head of the bone rests below and slightly in front of the glenoid cavity. In the third variety, subspinous, the dislocation is backwards on the dorsum scapular, beneath the spine, where the head of the bone can be felt. In the fourth variety, subclavicular, the bone is displaced forwards against the coracoid process and is described by Sir Astley Cooper as a partial luxation.

(*To be continued.*)

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

DR. WILLIAM P. NORTHRUP, CHAIRMAN.

Meeting of February 11, 1892.

A case of spina bifida was presented by Dr. A. Jacobi. The patient was two months of age, and the tumor, which was present at birth, growing rapidly. The wall was becoming thin over the central portion, and without operation would soon burst, and the child die. There was also talipes valgus, and the sutures and fontanelles were very large.

A demonstration was given by Dr. M. Putnam-Jacobi to prove the fact that when the lung is collapsed percussion yields tympanitic resonance, but when extremely inflated exaggerated pulmonary resonance.

Discussion on diphtheria.

Dr. Joseph E. Winters read a paper entitled

THE BEST APPARATUS AND BEST DISINFECTANT FOR USE IN MOUTH AND NOSE.

The author assumed, that the disease is caused by the Klebs-Lœffler bacillus; that it is primarily a local disease, the microbe elaborating in the exudate a poison which is absorbed and carried into the circulation, the germ itself not being formed in the blood or tissue. A point of vast importance in treatment is the fact that the specific germ on a perfectly healthy membrane does not provoke diphtheria. The primary indication, then, is not only to cleanse and disinfect the parts, but to destroy the germs *in situ*.

The activity of the Klebs-Lœffler bacillus is impaired by even weak solutions of carbolic or boracic acid. The practical deduction is, that at the outset we should attack the exudate or culture soil in order to prevent the microbic products from producing constitutional results. It is never safe, however, to employ means that will irritate the surrounding parts, for fresh points of infection are thus made. The only means of satisfactorily disinfecting the throat and preventing sepsis is by irrigation.

For this purpose the child should be placed on the side of the crib, and the rubber sheet arranged to catch the drippings, but he should under no circumstances be lifted from the horizontal position. If a Davidson syringe be used the cleansing will be more complete and will meet with less resistance than with any other apparatus. The irrigating should be done through the nostrils, for they cannot be tightly closed like the mouth, and with the first flow of fluid from the nose into throat the mouth is opened, and everything is discharged through the nostrils and mouth. It is occasionally necessary to syringe through the mouth. In this case the tip should be removed and the tube pass along the inner side of the cheek behind the last molar to the pharynx. In ordinary cases irrigation every two hours is sufficient. In severe cases it must be practiced every hour day and night.

For this irrigation nothing has proved as satisfactory as a ten per cent. solution of peroxide of hydrogen or a saturated solution of boracic acid. The passages must be thoroughly cleansed at each washing, and one pint of solution will be required. In the local treatment of diphtheria is included medicated steam from a croup kettle, and the inhalation of sulphurous acid gas through the burning of sulphur candles. For medicating the water in the croup kettle, add to one pint of water one ounce of spirits of turpentine and two drachms of oil of eucalyptus. In the use of the kettle plenty of rubber tubing is necessary, and the gas stove is the best means of generating the heat.

Dr. H. D. Chapin read a paper on

QUARANTINE AND DISINFECTION IN LIMITED APARTMENTS.

The management of diphtheria in tenement houses formed the chief subject of consideration. The furniture should be removed as far as possible and the child placed on a cheap cot instead of a bed or sofa. The mother, if she must also attend the rest of the family, should wear a wrapper which can be removed upon leaving the room. The area of contagion when ventilation is good, is small, probably but a few feet. If the germs can all be destroyed *in situ*, there will be no contagion. Old cloths or pieces of cheese cloth should be used about the patient and burned as soon as soiled. All articles of bedding should be shaken on the roof and exposed for a considerable time to sunlight and air, the two most powerful antiseptics at our command. The walls should be washed down with a sublimate solution, one to one thousand, and the same should be used in sinks and closets. Papered walls may be cleaned with stale bread crumbs. The burning of sulphur, while it may not be a great efficiency, is undoubtedly of some value. It leads to thorough subsequent ventilation at least. The throat and nasal passages of the other children of the family should be frequently sprayed with mild antiseptic solutions.

Dr. L. Emmett Holt read a paper upon

FEEDING IN DIPHTHERIA AND METHODS OF FORCED FEEDING.

In a disease like diphtheria, where the principal cause of death is asthenia or exhaustion, no question can exceed in importance that of nutrition and stimulation. The most common error in this direction is over-feeding, and over-stimulation during the first few days. It too often happens that when the critical period arrives the over-burdened stomach refuses to do its work. The subject may be considered under three heads: 1. Character of food and stimulants. 2. Frequency of administration. 3. Forced feeding.

As to character of food, little need be said except to condemn two articles frequently allowed, ice cream and jellies,

which interfere with taking more valuable food. The main reliance must be upon milk diluted according to the age of the child. Next to milk, beef broth, mutton broth, expressed beef juice, soft boiled eggs, milk toast, wine whey, oat meal, or barley gruel. Junket with a little wine added and Kumyss, when the child will take it, are valuable additions to the list.

In regard to the stimulants, brandy is best, but we must be guided by the child's whims and give what he will take best.

Experiments with stomach washing show that the stomach is rarely empty sooner than two hours after the meal. It is a safe rule never to give food requiring digestion oftener than this. Sitmulants and pre-digested food may be allowed at shorter intervals. The quantity of food given should be somewhat less than the child would take in health. It is best not to begin stimulants until they are indicated by the pulse or prostration, but they should then be pushed until the desired effect is produced, the only limit, in many cases, being the tolerance of the stomach. Unlike food,they should be given in frequently repeated doses. A careful record of the exact amount of food taken and retained should always be kept that we may know where we stand.

It sometimes happens that the child absolutely refuses all nourishment and stimulants. Coaxing, threats and commands are alike futile. Efforts to compel the child to take milk in teaspoonful doses result in the wasting of an immense amount of strength, while little or nothing is accomplished. It is at this juncture that the question of forced feeding arises. Rectal feeding in young children, owing to irritability of the sphincter, is almost impossible. Much more efficacious and with far less disturbance to the patient is forced feeding by the mouth or nose. The difficulties are surprisingly small. The ordinary apparatus for stomach washing is all that is required, the method of procedure being the same as in that process. Unless there is much resistance the mouth is to be chosen. Completely peptonized milk is to be preferred. The operation should be repeated once in four hours. In this way a proper amount of nutriment can be introduced with far less worry and resistance than by the spoon method.

The operation was demonstrated upon a child of ten months, a sufficient amount of milk being introduced in about ten seconds.

Dr. A. Jacobi spoke upon the subject of Constitutional Treatment in Diphtheria. He has been convinced of the value of bichloride of mercury in all forms of the disease, especially the laryngeal. He gives it in large doses. A child of six months will take a quarter of a grain a day with no untoward symptoms. Diarrhœa is rare and is quickly checked by a few drops of paregoric. Stimulants should not be delayed until signs of heart failure appear, for when that condition has once developed the patient is almost certainly lost. Very large doses are sometimes required, and they should be increased until an effect is produced. The doses of digitalis, camphor and alcohol as stated in the text books are no guide whatever. If rejected by the stomach they should be given hypodermically. One part of camphor dissolved in four parts in sweet almond oil may be given hypodermically with but slight local disturbance.

Dr. August Seibert demonstrated his method of Submembranous Antiseptic Injections. If the Klebs-Loeffler bacillus generates a poison within and underneath the pseudo-membrane, that is the place to attack it. He has therefore devised an implement consisting of a number of hypodermic points set closely together on a small disc by which an antiseptic may be injected beneath the membrane. As an antiseptic, he employs very strong chlorine water. The method has now been in use eighteen months with strikingly surprising results. It is designed to supplement, not to displace other local treatment. The injections being made but once a day, one or two, as a rule, being sufficient.

Dr. Beverly Robinson inquired if fluid introduced into one nostril did not usually pass out by the other. Dr. Winters replied that in young children a portion passes by the mouth. Dr. Vineberg approved of sulphurous acid gas as it gives marked relief to the patient.

Dr. J. Lewis Smith said that he used a stronger solution of peroxide of hydrogen than that proposed by Dr. Winters. Stronger solutions can be used in the throat than in the nose.

Dr. Stowell said that the strength of the solution must be graded to suit the case. Peroxide of hydrogen, if too strong, will cause irritation.

Dr. Holt said that in a personal trial he had found a ten per cent. solution too strong for comfort.

Dr. C. W. Allen described a screen of plain glass which he had seen used in Germany. It is held before the face of the patient during the examination of the throat. It does not obstruct the view and is an admirable protection to the physician if the patient coughs.

The Chairman urged that inasmuch as we now know the specific germ which causes diphtheria, and its habitat, that we definitely consider what remedies are for its destruction, and what are for the simple comfort of the patient; that the physician spend his time destroying the germs which are thrown off directly from the patient's mouth and less to blaming sewer gas and germs constantly floating in the air.

Dr. Fischer had made a series of examinations in tenement houses and had found the specific bacillus in the air in a number of instances. In one house four cases developed on different floors along the same line of pipes.

DR. FLOYD M. CRANDALL,
Secretary.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopædic Surgery.

Stated Meeting, February 19, 1892.

HENRY LING TAYLOR, M.D., CHAIRMAN.

Dr. W. R. Townsend presented a girl, 14 years of age, with rotary lateral curvature. At the age of 3 years, and after whooping cough, she developed an empyema on the left side, which opened spontaneously. These sinuses continued to discharge for five years, and the three cicatrices, one to the left of the nipple, and two slightly below and to the right, show the points where the openings occurred. When five years old, it was noticed one morning, that there was a complete loss of power in the left upper extremity. The mother said that there had never been any curvature of the spine before the attack of paralysis, although the child always slept on the left side, and that the curvature has been steadily increasing since then. The circumference of the chest at the nipples, is 24 inches, the right side measuring 15, and the left, 9 inches. There is a very marked lateral rotary deviation of the spinal column to the right, extending from the seventh cervical to the tenth dorsal, with compensating curves above and below. There is no torticollis. The breathing space is good, considering the amount of the deformity. The heart is not displaced. There is complete loss of reaction to faradism in the left supra- and infra-spinatus, and in the deltoid, and a reversal of the formula with the galvanic current. There is no anæsthesia, but marked atrophy of the shoulder and upper left arm. There is a partial loss of reaction in the pectoral, but the biceps, triceps, and forearm muscles react well.

The interesting feature was the relation of the rotary cur-

vature to the empyema and the poliomyelitis. His own opinion was, that the empyema probably caused a slight curvature, and that the paralysis had helped to increase it, but that there was no connection between the empyema and the paralysis; in other words, the paralysis was not produced by the scoliosis, but was separate and distinct, and due to a poliomyelitis. He had presented the case, chiefly because it was of interest in connection with the first paper announced for the evening.

Dr. Royal Whitman also presented a little girl as an illustration of a pure rotary lateral curvature caused by anterior poliomyelitis.

Dr. H. H. Berg said that he had had an opportunity of seeing this patient, and had obtained a somewhat different history. According to this version, the patient was still in bed with the empyema, when the family first noticed that she was lying more upon the left side. The occurrence of the paralysis was sudden, and the attending physician allowed her to get out of bed, and at this time, the extreme lateral curvature was first noticed. If this curvature were the result of the poliomyelitis, it would not have been so extreme at this early stage, for it takes time for muscles to contract and cause deformities. In this case the paralyzed muscles are on the left side of the body, and the primary curve toward the right, while in cases of lateral curvature due to paralysis, the healthy muscles must necessarily be on the concave side of the deformity. The only way in which poliomyelitis could possibly produce a curvature on the concave side of the deformity, would be in the third stage of this disease, i. e.,in the third or fourth year after the paralysis, when the muscles begin to contract into firm fibrous cords.

Dr. Royal Whitman thought if the long supporting muscles were paralyzed, it might be as the previous speaker had said, but in these cases where only the muscles supplying the shoulder were paralyzed, one would expect the curvature to be toward the opposite side.

Dr. Berg replied, that the intrinsic muscles are not alone paralyzed in this case. Lateral curvature must follow contraction of the intrinsic muscles of the spine, and not of the long muscles.

Dr. R. H. Sayre had seen a number of cases of lateral curvature dependent upon poliomyelitis with paralysis of the external muscles on the concave side, and hence, he thought, the statement that the convexity is always on the side of the paralyzed muscles, could not be accepted without qualification. He had been surprised that German writers took it for granted that empyema curves are not rotary.

Dr. S. Ketch was not prepared to endorse the view that the curvature was mainly due to the empyema; on the contrary, he thought the patient had that form of curvature usually found as a result of anterior poliomyelitis. Undoubtedly the empyema tended to exaggerate this curvature.

Dr. N. M. Shaffer said that so far as he knew, the first reported case of lateral curvature due to poliomyelitis, had been published in his book, in 1876 or 1878. That case had been examined by Dr. Seguin, Dr. Draper, and himself, and they had found the paralysis on the hollow side. On general principles, he believed that Dr. Berg was correct in his statement. In 1881, he had called attention to the fact that a rotary element existed in empyemic curves. It was exceptional for him to find a lateral curvature of the spine, due to empyema, which was not associated with a greater or less degree of rotation. The error probably arose from the fact that Dr. W. J. Little, of London, who first described it, made this mistake, and other writers had perpetuated the error.

Dr. Mary Putnam Jacobi called attention to the monograph by Eulenberg, on lateral curvature of the spine, in which he states very catagorically, that in ordinary typical cases of lateral curvature, the muscles on the concave side are necessarily the stronger and explains on this principle, the mechanism of the production of lateral curvature. His idea is, that it is due to a disturbance in the balance of the muscles of the two sides, whether extrinsic or intrinsic.

Dr. A. B. Judson said that in his earlier studies of lateral curvature, he had adopted, without due verification, the statement of foreign observers that rotation is absent from the curvature caused by pleural disease. At present, he believed that it does not occur, but in a very modified and unimportant degree. The collapse of the chest wall would weaken the action of some of the muscular and fibrous structures which cause rotation by holding the spinous processes nearer the median line than the bodies of the vertebræ. For this reason, we may well expect the rotation to be less marked. In the case shown, there is little difference in the diagonal diameters, which is the chief feature of rotation, and is caused, in an ordinary case, by the prominence, posteriorly, of the right back of the chest and the complementary prominence, anteriorly, of the left front of the chest. Here we have prominence front and back on the right side, and depression front and back on the left side, with but little difference in the diagonal diameters, a condition very unlike the effect of rotation. Still there may be, and probably is, some rotation in the vertebral column of this patient, although its effect on the deformity is not easily recognizable.

Dr. Townsend said, that owing to the fact that in this case, one was compelled to rely wholly upon the varying statements of the parents of the child, who were not very close observers, it would be well to be cautious in drawing conclusions from a study of this case alone. He did not agree with Dr. Berg as to the relation of the paralyzed muscles to the concave side.

VOLUNTARY SUBLUXATION OF THE KNEE PRODUCED BY MUSCULAR ACTION.

Dr. R. H. Sayre showed a child of fourteen months, presenting this condition. The mother first noticed this condition when the child was eight months old. When he was excited, the right knee is pushed in and out with a distinct click. The child was born after a normal labor, and there was no history of injury. He proposed to apply a splint, in order to retain the knee in position.

AN APPLIANCE FOR THE PREVENTION OF DEFORMITY IN HIP DISEASE.

Dr. Whitman presented a case illustrating this appliance. He believed that the long traction brace was the most useful appliance in these cases, for it assured us a perineal crutch, a protection which could not be removed on the patient. This was the principal objection to any brace which depended on axillary crutches for its usefulness. Simple fixation of the joint, allowing the patient to walk about on the affected limb, as practiced by Thomas and others, did not afford this protection, which he considered the most important element in the treatment of any joint affection. On the other hand, with the simple long traction brace, gradual and increasing flexion of the leg was a very common and troublesome complication. This was the weak point of the brace, and the one most constantly attacked by its opponents. He had therefore attempted to combine the merits of two braces as follows: The limb having been brought into perfect position, a slender steel bar attached above to an encircling thoracic band, and terminating just above the knee in a thigh band, was closely applied along the posterior aspect of the joint, after the manner of Thomas. The long traction brace was then applied as usual. Thus flexion was prevented, additional fixation assured, combined with effective protection. By dividing the function of the two braces, the posterior or miniature Thomas brace could be made very

light and comfortable; it, however, was not to be used as a lever to correct deformity. This should first be overcome by traction in bed or otherwise. He believed this division of labor to be more practicable than the addition of perineal bands and traction to the ordinary Thomas brace, as suggested by Lovett and De Pass.

Dr. Judson commended the use of one apparatus, the hip splint, to protect the joint, and another, the antero-posterior lever, if apparatus is necessary for this purpose, to oppose flexion. In general, it is better not to attempt too many things by one and the same apparatus. He thought the antero-posterior lever, for combating flexion and maintaining fixation, was the essential element of the Thomas splint.

Dr. Shaffer said that where supplementary apparatus is employed to limit the motion of the dorso-lumbar spine, and the motion on the acetabulum, unnecessary traumatism was inflicted upon the acetabulum. He had studied this subject quite closely, and in his opinion this motion of the dorso-lumbar spine is one of the greatest aids in the treatment of this condition. It was better to treat flexion by recumbency and rest until the flexion is overcome, than to apply an apparatus which antagonizes the very strong action of the flexor muscles.

Dr. Whitman said he recognized the force of what Dr. Shaffer had said about the flexibility of the lumbar spine, but he was inclined to think that the motion of the diseased joint which the simple traction brace permitted, and the deformity which it did not prevent, were more important considerations than the theoretical objection which Dr. Shaffer had presented. This fixation apparatus was applied before there was any flexion, and in the case presented there was no spasm of any of the muscles.

Dr. H. W. Berg read a paper entitled

DOES SCOLIOSIS EVER GIVE RISE TO PRESSURE MYELITIS?

Dr. R. H. Sayre thought there was no doubt that the differences in mammary development observed in cases of rotary lateral curvature were the result of trophic change, but the cause of this disturbance was still uncertain. In advanced cases he had been inclined to attribute this disturbance to pressure on the nerves at their exit from the bony canal. Pathological specimens showed not only a narrowing of the bony canal, but also large exostoses at the points where the vertebræ join; it was quite possible that these might project inward as well as outward.

The case described in the paper had at one time been under his care, and he had considered it as closely resembling disseminated sclerosis, although it was not typical of any diseased condition with which he was familiar. Dr. Spitzka had held the same position. The case had been diagnosticated as lateral sclerosis by one neurologist, and as hysteria by another eminent neurologist, who had employed hypnotism upon the patient, though unsuccessfully. She had been referred to the speaker with the idea that there was some pressure on the cord at about the tenth dorsal vertebra, which might possibly be relieved by a surgical operation. He had been unable, however, to detect any mass pressing upon the cord, and from the effects of momentary suspension, he did not think this method of treatment would prove beneficial. He did not associate the cord lesion with the lateral curvature. The trophic changes were probably due to the disturbance of nutrition external to the cord.

Dr. Shaffer considered that the author's case of lateral curvature differed only in degree from almost every case of this condition. It was rare to find lateral curvature without an exaggerated tendon reflex, a non-deforming club-foot, or various trophic changes, and the latter occur in incipient cases, before there can be any pressure on the cord. Girls suffering from lateral curvature are usually peculiarly nervous, and oftentimes seem to assume the responsibilities of their entire family. This is the direct result of the central nervous lesion, one which pertains more to the psychial condition than to the spinal cord condition. Our clinical studies drive us by analogy to look in the motor tract of the brain for the cause of the condition.

Dr. Ketch looked upon the trophic changes as an element in the etiology of lateral curvature, rather than the result of this condition. It was probable that at a very early period in life, there was a disturbance of the nervous system, most probably of the brain, which produced the lateral curvature. Boys having lateral curvature, show atrophy of the limbs, but the general nervousness is not so marked. For example, he had at present under observation, a robust boy, fifteen years old, with lateral curvature, who was supernaturally strong and supernaturally slow and apathetic. He thought it highly improbable that pressure myelitis ever occurred in these cases.

Dr. L. W. Hubbard could not understand how the paraplegia of Pott's disease could be said to be due to cord pressure from change of position, as clinically it seemed to bear no relation to the amount of curvature, or the situation of the lesion, and it was present when there was no curvature, and moreover, recovery took place without any change in the curve of the spine. He saw nothing in the case reported, analogous to the myelitis of Pott's disease.

Dr. Judson would eliminate muscular contraction as a factor in the causation of lateral curvature, believing that rotations and the curvatures, primary and secondary, are only the mechanical result of muscular failure to sustain the weight of the trunk. He would welcome with extreme pleasure any advance in our exact knowledge of the etiology of lateral curvature.

Dr. V. P. Gibney had never seen pressure myelitis in an uncomplicated case of rotary lateral curvature.

The chairman agreed with Dr. Hubbard that the analogy of the case under discussion to the myelitis of Pott's disease, was not very strong as according to the view advanced by Dr. Hoffa at the last meeting of the American Orthopedic Association, and generally accepted by those present; the paraplegia is due to the pressure of the inflammatory products. Personally, he had never seen a case of lateral curvature complicated by paraplegia, or symptoms of lateral sclerosis. Last fall he had a case of very moderate curvature with a very peculiar ataxic gait, but a careful examination excluded organic disease of the spinal cord, and it was decided to be a case of functional nervous disturbance, possibly produced by masturbation. It seemed strange that such a mild case as the one described in the paper, should produce such marked nervous symptoms, while the much more severe cases so often seen, have no analogous symptoms. He looked upon the cord lesion as merely a coincidence.

Dr. Berg, in closing the discussion, said that he thought the diagnosis of disseminated sclerosis very improbable, and this diagnosis had probably been made because a primary sclerosis of the cord is such a rare condition, that whenever a neurologist sees a spastic paralysis in an adult, and can find no cerebral symptoms, or symptoms of pressure upon the cord, he makes a diagnosis of disseminated sclerosis. Dr. S. Weir Mitchell had given it as his opinion, that the case was one of primary lateral sclerosis. There was no doubt as to the sclerosis and the lateral curvature, the only doubt is as to the connection between the lateral curvature and the sclerosis. Pott's paraplegia is caused by a variety of conditions, but he believed that in nearly seventy-five per cent. of the cases, the paraplegia was due to pressure resulting from flexion of the cord at the angle of the curve. He had no doubt that hundreds of cases had been seen

where the lateral curvature had been considered the result of paralysis, where it was really the cause.

FEMORAL ABDUCTION, ADDUCTION AND FLEXION.

Dr. Judson presented a convenient method of observing the degrees of motion in cured and convalescing cases of hip disease. The subject was illustrated by boards on which dolls were fixed, the center of motion at the hip in each case being surrounded by a graduated arc with the degrees numbered from zero, in the natural position of supine recumbency, with a slight lordosis, up to the widest limit of normal motion. In practice, the region of motion is first to be found, and then the extent to which it may be pushed, without disturbing the natural and symmetrical position of the lumbar vertebræ and the iliac spines, is to be noted on the goniometer. The degrees of motion in flexion and laterally may thus be readily recorded.

The presence of considerable motion warrants a serious effort to reduce whatever deformity may exist. He cited two cases in which the patients being considered cured, relief had been sought for the deformity. Enough motion was found to encourage hope and good results were recorded in a few months in each case after the application of a hip splint, and later, a simple ischiatic crutch, and the return of the patient by instruction and drill to the natural rhythm of walking. The improvement was readily measured in degrees from time to time, and the deformity was almost completely reduced.

A NEW METHOD OF MAKING PLASTER CASTS OF THE THORAX IN CASES OF ROTARY LATERAL CURVATURE.

Dr. Mary Putnam Jacobi exhibited a series of models which she had prepared by an original method. It had been suggested to her by observations made with the cyrtometer upon the condition of the thorax after empyema. An outline of the thorax at the desired level is first taken with a cyrtometer, which is an instrument consisting of two soft strips of lead united by a hinge, which is placed over the vertebral column, and the lead strips closely applied to the chest walls. The lead is next placed upon a slab of marble, where it serves as a sort of shallow frame, into which the plaster of Paris cream is poured, and allowed to set. This gives practically a thin plaster cast representing a section of the thorax.

She called attention to the ease with which the diagonal diameter could be obtained, and also to the way in which these casts brought out small degrees of curvature.

Discussion on the papers of Drs. Judson and Jacobi postponed.

Academy of Medicine, Kansas City, Mo.

March 12, 1892.

Emory Lanphear, M.D., Ph.D., Kansas City, Mo., Surgeon to University Dispensary, etc., read a paper entitled

LAPAROTOMY UNDER COCAINE.

There are, many times, patients who require abdominal section yet who are in such physical condition as to almost absolutely prohibit the administration of either chloroform or ether. In such instances the surgeon may without hesitation make the operation under the effects of cocaine. The following is an instance:

Mr. W——, age fifty-two, patient of Dr. F. B. Wheeler, of Sawyer, Kansas, was admitted to the All Saint's Hospital suffering from a cancerous tumor of left side of neck, of very rapid development. Patient began to experience difficulty in swallowing about nine weeks ago, when his weight was 165 pounds. The dysphagia increased at an alarming rate and two weeks before admission to the hospital it became a matter of impossibility to swallow at all. Partial removal of the tumor was done by Drs. Wheeler and McCoy (of Pratt, Kans.), under local anæsthesia, it being deemed inadvisable even at that date to use chloroform or ether. There was very little improvement, so patient was brought to Kansas City to the hospital for further treatment.

When admitted he was *in extremis*—cadaverous, weight less than 80 pounds and at the gate of death from starvation. Upon the evening of admission the abdomen was carefully scrubbed and shaved, and a pad of moist bichloride gauze applied. At 9 A.M. on the following day, assisted by Drs. J. F. Binnie and T. B. Thrush (Dr. Sawyer standing ready to administer ether if it should be required), I made a gastrostomy under local anæsthesia from cocaine. One-half dram of a 4 per cent. solution was injected in eight places into the subcutaneous areolar tissue along the proposed line of incision. As soon as the analgesic effect was established the usual operation was made, and without any pain or even sense of discomfort on the part of patient. The only disagreeable symptom was a slight nausea when the left lobe of the liver was turned up to allow the stomach to be drawn up into the wound. The operation lasted twenty-two minutes.

How much longer the operation might have been prolonged without discomfort to the patient is a question of interest. But as a large number of the abdominal operations can be made within twenty minutes it is not so important as might at first be supposed. Besides the fact that the primary depressant effect of a general anæsthetic was avoided by the use of cocaine, there were two other points of much importance in this case, viz.: the absence of the vomiting that nearly always follows chloroform or ether and especially the *absence of shock*. There was a total absence of anything like shock, and if this be found to be a general rule an immense gain may be made in sewing up stab or even gunshot wounds of the intestine (as well as in other numerous abdominal operations), by the use of local instead of general anæsthesia.

DOMESTIC CORRESPONDENCE.

PHILADELPHIA LETTER.

Now that Spring has come, according to the almanac, we may take mental survey of the season which has just passed and sum up our impressions of its general character. The verdict from a medical standpoint is that it was bad and that nothing in its conduct became it so well as the manner of its leaving. Following the epidemic of influenza, we have had in this city an unusual number of other zymotic affections. From January 9th to March 12th, there were 949 cases of diphtheria reported to the Bureau of Health of Philadelphia, of which 315, or 33 per cent., terminated fatally. During the same period, there were 609 cases of typhoid fever, with 140 deaths. In the opinion of the Health Officer, the high percentage of deaths warrants the conclusion that physicians have not made a prompt return of all the cases as required by law. The recent outbreak of typhus in New York (owing to the landing of some Russian and Italian immigrants from an infected ship, some of whom were traced to this city), has stimulated our Health authorities to adopt every precaution to prevent its spread here. House to house visitation by a corps of inspectors in the lower parts of the city, the discovery and prompt isolation of the new arrivals from the *Massilia*, with disinfection of baggage and apartments, and other customary precautions, have thus far proved sufficient to prevent the spread of the disease, although one or two cases have since occurred and were promptly taken to the Municipal Hospital. It was reported in the daily papers, that one of the Massilia's passengers was attacked by typhus at Plymouth in this State, and a death from typhus has just been reported from another inland town, suggesting the possibility that the returns are not all in yet. The efficiency of our Health Bureau was thoroughly tested by this instance of introduction of infected persons

and baggage, and the prompt and skilful manner in which the emergency was met deserves high commendation. Occurring just at a time when the profession generally is petitioning Congress to create a National Health Bureau, this outbreak of typhus and the measures taken to limit its spread or extinguish it, affords an object lesson which will not be lost upon the community, if we may judge from the attention given to it by the secular press.

The influenza epidemic is over, but the aftermath is with us in the shape of catarrhal and nervous disorders of various kinds. Prof. D. Hayes Agnew has not yet recovered from his attack of some months ago, and within the last few days has been quite seriously ill with bronchitis but is improving slowly.

The following abstract of a very interesting communication to the College of Physicians, by Dr. James Hendrie Lloyd, gives a very important idea of his really valuable paper which was entitled "Forms of Pseudo-Tabes due to Lead, Alcohol and Diphtheria:"

Although locomotor ataxia is one of the best known diseases, it happens occasionally that it is confounded with one of its counterfeits. These counterfeits are especially forms of pseudo-tabes or acute ataxia originally described in 1884 by Dejerine and since pointed out by Dreschfild,Leyden and others. Dejerine's cases occurred in alcoholic subjects, who developed incoördination, anæsthesia and abolished knee-jerks, with very slight atrophy and paresis, and without eye and bladder symptoms. The autopsies revealed inflammation of the cutaneous nerve endings, with slighter changes in the intra-muscular nerves. Leyden included such cases in one of his sub-divisions of multiple neuritis, the so-called "sensible forms." The author of the paper had observed a number of those cases of pseudo-tabes, one due to diphtheria, another to lead and others to exposure, alcohol etc. He presented sections of the spinal cord and nerves in a case of chronic lead-poisoning, in which the diagnosis of locomotor ataxia had been made by a competent clinician. The sections do not show the systemic lesion of true tabes dorsalis, but extensive multiple neuritis, with some areas of myelitis, probably secondary. The most common symptoms in cases of pseudo-tabes are disorder of sensation, as anæsthesia and paræsthesia, pain, ataxia and abolition of the knee-jerk. To those are to be added symptoms, in varying intensity,of involvement of the motor nerve,never perhaps quite absent but often requiring a careful and expert examination to detect. In some cases the history is necessary to determine a correct diagnosis. Lead, alcohol and diphtheria are the most common causes. The eye-symptoms are valuable for purposes of differentiation from true tabes. Except the ciliary paralysis in diphtheria, it is doubtful if the internal and external eye-muscles are often effected in any form of multiple neuritis—while the Argyle-Robertson pupil is certainly very common in true tabes. In lead poisoning optic neuritis is sometimes seen. Affection of the bladder and sphincter ani is not common in neuritis. Rapidity of evolution is not a sure sign of neuritis; moreover true tabes may evolve rapidly. According to Erb's later researches most cases of locomotor ataxia have history of syphilis. This suggests the possibility of pseudo-tabes being sometimes caused by syphilis, which might explain some of the published cures of syphilitic cases. Finally multiple neuritis may probably in some cases precede true tabes, and sometimes appears during the course of the latter disease. The importance of a differential diagnosis is evident. The paper was illustrated with cases seen and reported by the author.

Prof. Harrison Allen delivered a suggestive lecture in the scientific course of popular lectures at the Academy of Natural Sciences, on Feb. 19. His title was, "On the Mechanism of the Mammalian Limb." He first compared the structure of the limb in different groups of animals, and beautifully traced the relation between the structure of the mammalian limb and the medium which it encountered in locomotion and support. He showed that marked differences exist in the size and development of the limb in animals which fly, those which swim, and those which walk, run or leap upon the ground; the size steadily decreasing in proportion to the density of the medium. The changes in the skeleton accompanying these differences were next discussed, and the cause of the large pectoral muscles explained. The relation existing between the motion of the anterior extremity and the respiratory act was called to mind, demonstrating the advantage of the placing such an extremity at the side of the front of the thorax. In the terrestrial type, the motion of the limbs holds an exact relation to the centre of gravity of the body. In the most rapid motion, the front limb can retain its plane of support on the ground until the trunk has passed along so far as to bring the centre of gravity in a vertical line passing through the foot. In a subsequent attitude of support the hind limb can reach forward as far as, or even beyond, this line. The outer border of leg and of the foot, in all quadrupeds, has distinct innervation from the inner border; in the fore limb it is the ulnar nerve, and in the hind limb it is the musculocutaneous branch of the peroneal nerve. Contrary to the general view, the outer border of the foot strikes the ground first, instead of the foot coming down horizontally. Besides being used for locomotion and support as in quadrupeds, the limbs are also used for climbing and support by hanging, as in the sloth and the bat, for instance. Thus there is another modifying element in accordance with the use of the limb for "impact," or prehension, or "strain." In man, the lower limbs are of the former type, while the superior limb is specially adapted for strain, though it may be used indifferently for either purpose. Prof. Allen made an application of these facts of comparative anatomy to the study of fractures, especially of the upper extremity, and claimed that it is only when studied in this way that certain forms of fracture become intelligible. The text-books usually teach that in falling prone, the hand comes to the ground directly in the middle, or on the thumb side. This he finds is incorrect, and declares, from a study of specimens of fracture of the lower end of the radius by this accident, that the force of the blow was sustained by the little finger side of the hand and forearm. The result shows that the parts of a limb adapted for strain are easily disadjusted, when called upon to perform the duties of impact.

Prof. Daniel G. Brinton, M.D., is delivering a popular course of lectures at the Academy of Natural Sciences, upon Anthropology, his special subject being the "Ethnology of the United States." In his lecture upon the white race, he declared that the descendants of the original settlers, and early colonists, in those parts of the country which were out of the usual lines of travel and subsequent immigration, showed decided evidences of degeneracy, both physical and intellectual; the former being manifested by the exaggerated length of the limbs as compared with the poorly developed body, the lean or lank form, the sterility, or comparatively slight productiveness, of the women and the latter in the form principally of eccentricities of conduct, crankiness, and tendency to a form of insanity known as "systematized delusion," which is most frequently met with in small, isolated communities in New England, and also in the Southern States. Were it not for constant immigration from the Old World, Dr. Brinton believes that in America the white race would ultimately perish. The principal cause for this lies in the fact that the conditions of life, the atmosphere and climatic character of this country, and the food, are all

quite different from those to which the early settlers had been accustomed, and he holds that the white race has not yet become thoroughly acclimatized in the United States. Part of the degeneracy is attributable to the abuse of alcohol and tobacco; although these are subsiding causes—and, in fact, these agents used in moderation do not appear to exert any ill effect. He noticed in passing, however, as a physiological fact, that the smoking of a cigar produces a sudden, though temporary, depression of the vital functions, as demonstrated by actual experiment; and when this is frequently repeated, the result becomes very evident in deterioration of physical structure and functional activity. The tide of immigration has been mainly confined, for nearly a century, to that portion of the United States lying between the 40th and 44th parallels of north latitude. The portions lying both to the north and south of this belt have been almost undisturbed, and in consequence afford a better opportunity of studying the effects of our climate and food for several generations. Although food is abundant, it is often badly cooked, indigestion is very common, and the physical organism suffers in consequence. He observed that nothing can be more true than the proposition that deterioration of physical structure must result in diminution of intellectual vigor and activity, although the statistics of the Provost Marshal General's office, based upon examinations of a million of enlisted men, demonstrated that the average American soldier is taller and stronger than the European. The future of the white race in this country, according to Dr. Brinton, therefore depends upon immigration of the right kind of material to strengthen the stock, until the material conditions of our life are so harmonized with the individual as to favor the formation of a permanent variety of the human family. It would be suicidal to this country to absolutely prohibit immigration; but, on the other hand, efficient means should be provided to prevent the infusion of elements already degenerate, who are outcasts from older communities. Thus far the typical American cannot be said to have appeared upon the stage, in spite of the well-known caricatures of Brother Jonathan in the European humorous papers.

In order to reduce the number of baby farms, and to keep some kind of supervision over them, a law was passed at the last session of the Legislature, requiring registration and the payment of a small fee, for which a license was issued by the local health authorities. The city papers have recently brought to public notice some violations of the law, chiefly among the colored population, where, as a rule, however, the babies seemed fairly well cared for. One curious economic and commercial or social feature has been developed by the investigation, which is not very creditable to those engaged in it. It appears that agents of small beneficial companies circulate constantly among these boarding-houses, writing policies of life insurance upon the little waifs. The custodians pay from one cent to ten cents per week on each policy, the company or individual furnishing the certificate guaranteeing to pay $8, $10 or $15 in case of death, which enables the keeper to bury the child and have a few dollars left over. Under such circumstances, if the nurse labor under the delusion that laudanum is a panacea for infantile ills, it should surprise no one, should the mortality among bottle-fed babies prove to be high. A short time ago, a baby 5 months of age, in the care of an unregistered boarding-house keeper in this city, died after having laudanum administered for cramps. The plea was made that laudanum was a "necessary medicine" for infants, and she escaped with nothing more serious than a fright and a warning. Should this doctrine gain ground, it is feared that the insurance companies will have to raise their rates or prepare for bankruptcy.

A case of leprosy in a Japanese has excited much comment lately. The patient had characteristic disfigurement of the face, and mutilation and ulceration of the hands, when he applied for admission to the Philadelphia Hospital. Upon investigation it was found that, until he became so ill that he sought treatment in the city hospital, he had been acting as cook in a down-town, third-rate hotel, kept by a Dr. Paine, who a few years ago enjoyed some involuntary notoriety in connection with the bogus diploma traffic. The doctor claimed that he had the leper under treatment, but he was held to answer for not reporting the case to the Health Bureau, and under a criminal charge for maintaining a nuisance injurious to the life and health of the community. This makes the second case of leprosy now under treatment in the Philadelphia Hospital, and a bill has just passed Council to erect an isolated building for the confinement of cases of leprosy which come under treatment. The cook's late apartments, at the Peabody Hotel, have been disinfected by the city health officer, who recommended the closure of the hotel, but this step was not taken by the authorities, although it is likely to happen as a natural consequence, since the guests have nearly all fled. It is in evidence that John Wing, the leprous patient, had been seen "preparing food, cutting and cooking meats, preparing the filling and stripping poultry, mixing the flour and working bread, cakes and pies, and doing all manner of cooking for the guests. At times, his feet and legs have been so sore that he has been compelled to sit upon the table where he mixed the flour." He had been treated by steam baths in the same boxes used for other patients. Major Yeale, a health officer, suggested that the Board of Health request Congress to provide a camp, or home, where all lepers in the United States may be sent and provided for by the United States Government. This recommendation was favorably received, but final action was postponed. Here is another illustration of the possible usefulness of the prospective National Health Bureau.

In Lancaster, an interesting report was read before the local medical society, of a local epidemic of scarlatina, the infection having been carried from house to house by a dog. He was a general favorite in the neighborhood, and it was noticed that where he had visited the children subsequently were attacked by scarlatina.

At the Orthopædic Hospital, Dr. Thos. G. Morton recently treated an unusual case of ununited fracture. It occurred in a boy ten years of age, and large for his years, who was free from constitutional disease, and lived out of the city in a healthy neighborhood. The injury was occasioned by a large plasterer's box falling upon him from a wagon, which produced a fracture of the femur near the small trochanter, and quite oblique, so that the upper fragment projected forward, and the upper end of the lower fragment slipped behind it. The physician in attendance placed the limb on a double inclined plane but it was impossible to keep the fragments in contact. Three months later he was brought to the hospital with the fracture still ununited. Upon examination, the upper fragment was found nearly protruding through the skin; it was spiculated and it was surprising that it had not ulcerated through, and a little pressure would have forced it through the overlying skin. The upper end of the lower fragment was buried deeply and could not be felt. There was no union. Dr. Morton decided to cut down upon the fragments, saw off the sharp ends, and unite the broken bone by wire sutures. After making an incision six inches long over the sharp point of bone and just to outer side of the great vessels, he divided some fibrous bands and wired the ends together, and left a rubber drain in the lower angle of the wound. This was done six weeks ago; since then the boy has had no bad symptom, and now has

apparently firm bony union. This is the only example of ununited fracture of the femur at such an early age, that Dr. Morton had ever seen in a patient otherwise healthy.

There was no constitutional cause, no Bright's disease, no struma, or other cachexia. It well illustrates the necessity of regarding fractures of the upper part of the thigh as requiring something more scientific than routine treatment. Dr. Merton took occasion to point out the fact that non-union here was unavoidable because the fracture had not been reduced, and he said that, in such a case if he found reduction and retention impossible by ordinary means, he would feel justified in cutting down the fragments and wiring them together as a preliminary to the treatment. He is opposed to fixed dressings, and thinks that fractures should be frequently inspected, and as the rule no apparatus or dressing should be used which will not permit this precaution.

By invitation of the County Medical Society, Dr. Benj. T. Shimwell presented a new method of operating which he claims is a scientific cure for hernia. It is like the Tait operation to the extent that it requires median laparotomy, but here the resemblance ceases. Dr. Shimwell claims that hernia is caused by an abnormal length (or breadth) of mesentery; and by shortening the mesentery by taking a "tuck" or "reef" in it, he asserts that descent of the bowel is impossible. He has made a number of experimental operations upon dogs, and claims that his operation upon the mesentery does not in any way interfere with the vascular or nervous supply, or with the lymph vessels or lacteals. The operation has not yet been performed upon the living human subject.

The Trolley system of electric propulsion of street cars has not up to this time succeeded in disfiguring the streets of Philadelphia, owing to the strong public feeling against the overhead wires carrying high tension currents. A powerful corporation now has a bill before the city council, asking the privilege of taking possession of the streets for this purpose on the plea of rapid transit. A meeting of the Philadelphia County Medical Society, was held on March 12th to consider a resolution expressing the opinion of the Society on the subject of the perils to life and person from the overhead wires of this system, and the subject was warmly discussed. City Council some eight years ago, passed an ordinance forbidding the erection of posts for overhead wires and ordering all wires to be put under ground within a certain period, but thus far it has remained a dead letter. It now looks as if the present Council might undo this work and rush through this ordinance in spite of the protests of physicians and property owners along the streets where it is proposed to run the electric cars, since the railway committee of Common Council have just reported the bills favorably, with an overwhelming majority.

The new Methodist Episcopal Hospital will be opened for the reception of patients on the first of next month. The building is on the pavilion system, modelled after the Johns Hopkins Hospital of Baltimore. There are six ward buildings besides an administration building, and the institution will have ample accommodations, in twelve public and thirty private wards, for 350 beds. The ward buildings are octagonal in form, one hundred feet apart, and arranged in groups of three on the sides of a square of ground containing five acres, situated upon South Broad St., and occupying an entire square to 13th St. and from Wolfe to Ritner Sts.

The many friends of Dr. A. L. Gihon, Medical Director of the United States Navy, are pleased to see that he is likely to become Chief of the Bureau of Medicine and Surgery of the Navy Department at Washington. He is a native of this city and obtained his education here and at Princeton, N. J. Indeed he was professor of Chemistry and Toxicology in the Philadelphia College of Medicine and Surgery for some time; and, after entering the navy as Assistant Surgeon, his first assignment was to the receiving ship "Union," at the Philadelphia Navy Yard, in May, 1855. For these and other reasons, some of them personal, it is hoped that he will be advanced to the post, which will become vacant by expiration of term at the end of this month. If it should be conferred upon a Philadelphian, as we confidently expect, the news of the appointment will be received with especial gratulation in this locality.

The University of Pennsylvania has just received a munificent endowment of nearly a million of dollars for a biological and anatomical museum, from General Isaac J. Wistar. He purposes to expend $190,000 for a building, and to endow with a fund which will yield the sum of $30,000 yearly for maintenance. It will be known as the "Wistar Institute of Anatomy," in memory of Dr. Caspar J. Wistar, the uncle of the donor, who was once a professor of Anatomy in the University. It will be under the immediate direction of an independant Board of Managers, to be elected by the University Trustees. One of the Managers must be a descendant of the Wistar family and two others the President and Vice President of the Academy of Natural Sciences of this city. Plans have not yet been approved for this building but the site has been selected immediately adjoining the Biological Department.

THE CODE OF ETHICS.—It is in great form now-a-days in certain communities, with both physicians and laymen, to decry the code of ethics of the American Medical Association, which is the foundation for the codes of local medical societies. We believe that this is a mistake. We regard the code as an embodiment of the moral law, as it bears upon our duty to ourself and to our neighbor; or, to express it otherwise, of the highest and most practical business principles. We believe that it would be endorsed by any great merchant of high principle.

The public has fallen into the error of believing that the code of ethics usurps the authority of the moral law in the estimation of the physician.

We regard it simply as an expression of the most enlightened medical thought and experience; an aid to a proper solution of the very difficult problems which beset the physician; a check which tends to restrain unprincipled and aggressive practitioners, and an authority which may be referred to in cases of dispute. It is helpful to a physician to be able to consult the printed opinions of the best medical men in such cases.

Some of the precepts of the code of ethics, such as its teachings in regard to the assumption of duties for a brother practitioner and the concealment of useful discoveries, come to us with a binding force, because founded upon the law of brotherly love and the law forbidding covetousness. Other precepts, such as those concerning consultations with irregular practitioners, and undercutting of fees for the sake of competition, are simply bits of human experience—showing what is believed to be for the best interests of medical science and of the public in the long run.

It is a great comfort to belong to a profession which has, down the ages, frowned upon everything degrading or unworthy of the highest manhood and the best service to mankind, whether within or without its fold.—*Maryland Medical Journal.*

OWING to new sanitary measures in England there has been a diminution of more than thirty per cent. in the death-rate from consumption since 1861.—*Lancet.*

THE new United States Pharmacopœia will have all formulas expressed in metric terms.

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SATURDAY, MARCH 26, 1892.

INFLUENZA.

Notwithstanding the importance of this subject, and the frequency of the disease during the past winter, we have refrained from touching upon it at length in these columns, because of the uncertainty in which many careful practitioners seemed to be regarding its nature and treatment, and because of the wide divergence of the opinions recorded in current medical literature.

The disease as it appeared at first, during the winter of 1889 and 1890, was quite different from that of the following winter, and that now prevailing. Upon the whole the attacks were of shorter duration, yielded more quickly to the modern antipyretics, presented fewer complications, were followed by less depression, and by fewer severe sequelæ.

During the past two winters the milder forms of the disease have been less distinctive than before; the diagnosis has not been made with as much certainty as during the first year. The severer forms have been more common and the mortality greater. The disease seems to have been capable of seeking out the weakest point in an individual, and expending its violence there. In this way the clinical picture has been most comprehensive, and the individual peculiarities most varied. It has seemed almost as though this disease was capable of producing any clinical manifestation that other febrile disorders could present.

There is excellent ground for the diagnosis of influenza under the most varying conditions. Not only has it produced neuralgia and bronchitis, but also neuritis and pneumonia, laryngitis, pleurisy, meningitis, both of the convexity and of the base, cerebral and spinal, various disorders of the heart, of the gastro-intestinal tract, of the liver, kidneys, spleen, testicles and skin have been noticed. Indeed not a single organ or tissue of the body has escaped its ravages.

It has simulated various acute infectious fevers, and enteric and scarlet fever have been named where influenza was the disease actually at work.

There appears good ground for the belief that its influence has been felt in the course of diseases which primarily were not influenza.

While it is not clear that it has interfered with convalescence from surgical operations, medical conditions, particularly those with fever, have been affected by it.

The great mortality from typhoid fever during the past two years in the city of Chicago seems to have been an effect of the influenza epidemic rather than due to a great increase in the number of cases of typhoid.

Whatever phase the disease has taken, four conditions were almost always present. These were, suddenness of onset, pain, depression, and a febrile movement. The pain appeared nearly invariably as headache, and general muscular pains. The febrile movement was characterized by its great irregularity. In some cases the temperature was low and varied but little; in others it maintained a constant high degree, in still others, two or three irregular exacerbations and remissions occurred daily.

A tendency to sweat should also be noted as a very constant symptom, and one which appeared to be conservative.

The treatment employed has varied greatly in different hands and it is very uncertain how much good has been accomplished by therapeutic measures. For the relief of pain, antipyrine, acetanilide, phenacetin, salol and the alkaline salicylates have been largely prescribed. Frequently great success has followed their use, but the resulting depression has at times seriously interfered with their usefulness. Of these remedies phenacetin, salol, and the salicylates, particularly ammonium salicylate, have appeared to be the most useful. To the action of these drugs in promoting sweating, can be attributed no little of the good which followed their use, other than the mere relief of pain. Of the opium preparations used as anodynes, the sudorific Dover's powder seems to have been the best.

The cardiac depression that was manifested during the disease, was prolonged several weeks after the acute symptoms had subsided, and much delayed convalescence. To meet this depression, the most useful remedies have been alcohol and strychnia. Strychnia in ordinary doses produced but little effect, but in large doses, $\frac{1}{20}$ of a grain four or five times daily, its good effect was manifest. Even in these large doses, no muscular twitchings were produced. The value of this agent as a cardiac stimulant has been brought out more clearly this winter than ever before. That is, its use has been more general. Particularly has it been useful in pneumonia. In this disease or complication, when cyanosis was present,

and digitalis in consequence contra-indicated, the effect of strychnia in sustaining the heart has been very clear, and very satisfactory. Under such conditions it is preferably administered hypodermically in doses of $\frac{1}{50}$ to $\frac{1}{30}$ grain, and at intervals of three or four hours, according to the necessities of the particular case.

External heat has been a factor of no small importance in the treatment of influenza. A very large number of the patients found a high external temperature agreeable.

Rest, physical and mental, has played an important rôle. When rigidly enforced, it can hardly be doubted but that it has been effective in preventing complications, and in hastening convalescence.

THE ANÆSTHETIC INVESTIGATION OF THE BRITISH MEDICAL ASSOCIATION IN 1892.

A highly important investigation, clinical in its main features, has been arranged to be carried on during the current year by the great British Association. Every anæsthetist, surgeon and hospital in the United Kingdom, and many others, have been supplied with formulated questions, and blank-books of record, suitable for uniformity of returns both from private and hospital practice. The General Committee has for its chairman, MR. JONATHAN HUTCHINSON, and for honorary secretary, DR. CHRISTOPHER CHILDS, of Weymouth. The work has been begun in good season, and will probably result in the richest harvest of anæsthetic experience that has hitherto been garnered. If the great British body of medical workers can be induced to move *en masse* in any such collective investigation, and to give a whole year to any allotted subject, it would seem like breaking open "a royal road" to knowledge. We give below the instructive lists of questions, framed by the General Anæsthetic Committee, in the belief that they will prove useful to some of our American hospitals, and surgeons, whose anæsthetic records are not yet systematically tabulated. Perhaps in another year or two our own national Association may undertake a parallel inquiry by committee or otherwise, for comparative purposes with the completed returns of the British investigation. Germane to this subject, we would call attention to the discussion on "the A. C. E. Mixture," by the Ohio State Medical Society in 1891. A carefully written paper by DR. J. C. REEVE, of Dayton, opened the debate, which was full of interest. Something of definiteness and uniformity, however, seems to be lacking in such discussions; and, as we believe, just for the reason that a good and comprehensive scheme of questions and responses has not been prevised, provided and used. We trust that the reproduction below of the admirable lists of queries of the British Committee may be useful far and near in this country.

"Program of Records and Information Wanted.

1.—The total number of Administrations of each anæsthetic during 1892, by yourself or under your supervision.

2.—The number of cases in which death has occurred during or shortly after anæsthetization.

3.—The number of cases in which dangerous symptoms have occurred.

4.—Special details of cases where dangerous symptoms or death have occurred.

5.—Personal experience and opinion on the points in question.

"At the end of the year 1892 the Committee will be glad of answers to the following questions:—

1.—The source of your anæsthetics.

2.—The method, manner and apparatus generally used.

3.—The approximate time usually required for producing anæsthesia sufficient for operation.

4.—The modifications and precautions adopted—

a.—In certain cases of disease (*e.g.* emphysema, pleurisy, abdominal distension, heart disease, etc).

b.—In certain operations (*e.g.* in region of pharynx, larynx, etc).

5.—Your opinion, formed from your own personal experience as to—

The relative safety of the various anæsthetics which you have used.

The best method and manner of administering them.

When to use one, and when the other.

The precautions to be taken with regard to the conditions and surroundings of the patient.

How to deal with any complications that may arise.

The most effective methods of restoring patients threatened with death from anæsthetics.

6.—Education in administration of anæsthetics.

How are students taught to administer anæsthetics, and how far are they compelled to gain a practical knowledge of administering them in the medical schools or hospitals with which you are connected."

The following synopsis will give an idea of the special details requested in cases of death, or dangerous symptoms—(*i.e.* such symptoms as raise the fear of immediate death, and call for the use of artificial respiration). Special details of cases in which dangerous symptoms or death have occurred.

a.—The anæsthetic.

1.—Its nature, *e.g.* ether, chloroform, etc.

2.—Purity of drug, *e.g.* from what source obtained, how long kept, whether exposed to light, etc.

(N. B.—Communication should at once be made with Professor Ramsay, University College, London, who has kindly consented to analyze a sample of any anæsthetic which has caused dangerous symptoms.)

3.—Whether other persons who have taken from same source have evinced kindred symptoms.

4.—Method of administration: amount of dilution; length of time administered.

5.—Quantity used.

b—The patient.

1.—Age; sex; physique; first time or not of taking anæsthetic; previous drugs (*e.g.* chloral, morphia, alcohol, etc).

2.—State of health.

3—Preparation of patient: food, purgatives, clothing, temperature of atmosphere, etc.

4.—Phenomena of anæsthesia, *e.g.* length of time going off.

struggling, laryngeal spasm, convulsions, vomiting, etc. Condition of pulse, respiration, pupil, reflexes. Was anæsthesia profound?

5.—Which failed first—pulse or respiration?

c.—The operation.

Nature and duration. Whether antiseptic spray used; patient kept warm; posture; amount of hæmorrhage, shock.

d. After effects.

Faintness, exhaustion, vomiting, etc.

e. Methods adopted in cases where death or symptoms of danger have occurred.

(*e.g.* pulling forward of tongue, inversion of patient, artificial respiration (which method), nitrite of amyl, electricity, heat, etc.—and with what results)."

Among the members of the Committee are Sir Joseph Lister, Sir George Macleod, Pridgin Teale Snow, Macewen, Chiene, Annandale, Buxton, Durham, Croly, Butlin, Buchanan, Joseph Bell and Duncan.

NOTIFICATION OF INFECTIOUS DISEASES.

The public has so long been accustomed to the good-nature of physicians, and has so long expected from them work without compensation, that perhaps it is not surprising that they fail to recognize the financial rights of the medical man in the matter of notification of infectious diseases.

The somewhat peculiar doctrine has recently been promulgated by the lay press of Chicago, that the physicians of Illinois, being licensed by the State, are under obligations to the State, and the State has the right to demand of them certain things, as for instance the report of births and deaths, and the notification of infectious diseases, of course without compensation. If this right is inherent in the State, there is no reason why it should stop at these services. It may equally well require the services of physicians as experts in its courts, with no other compensation than a witness fee, or might compel them to attend gratuitously such indigent poor as might be certified to them by certain officers. The question at issue is not the smallness of the services, but the principle. The State has certainly no right to demand the services of physicians, any more than those of any other class of the community, without just compensation.

The trouble lies in the license. Its nature is misunderstood. It confers no favors upon the physician who holds it, it gives him no additional rights. Licensing is a measure adopted by the State to protect the community from improperly qualified practitioners. It is for the benefit of the State, not physicians. The term license is indeed a misnomer. The word registration should be used. The State prohibits the practice of medicine by physicians not registered, whatever may be their qualifications. It admits men to registration who have certain qualifications, and excludes from its register physicians who cannot comply with the requirements. It can hardly be held that such acts on the part of the State confer any privileges upon the physicians registered. If any privileges are conferred, they are certainly paid for at the time, by the fee given to the State Board of Health, and the fee given to the County Clerk.

Very few physicians would object to reporting births, deaths and infectious diseases, for the benefit of the community, but it is contended that, on principle, a fee should be paid by the authorities for the rendering of these services.

In England, where a similar system of registration prevails, a fee of 2s. 6d. is paid for each notification under the Infectious Diseases (Notification) Act of 1890.

An odd case has recently been tried, in which it has been decided that the notifying physician is entitled to the full fee, without any deduction, even that of postage. A sturdy champion of abstract rights, Dr. Chisolm, of Radcliffe, took the matter into court, and in a recent communication[1] says: "According to Judge Jones' decision, unless the local authorities arrange otherwise, and thus save double postage, medical men can send the notices in unstamped envelopes, and the medical officer of health is bound to receive them. . . . . Should the medical officer of health, or such officer as the notice be addressed to, refuse to receive the letter, as was done in my case, it is returned to the sender, who should receive it and pay whatever postage is charged, as it will be evidence, should the case come to trial, that he has done the work for which he claims his fee, and, in this instance, the out-of-pocket stamp value for the returned notice."

ASSAULTS UPON MEDICAL MEN.

The profession is pretty well disciplined to expect to hear of assaults on medical men by insane persons or patients. But for them to be assailed by persons in normal mental condition is fortunately a decidedly rare occurrence. An incident of this latter kind, however, is said to have transpired at Chattanooga, Tennessee, February 24. A man and his wife took part in the onslaught, which was made in the public street, with a cowhide. The physician is spoken of as holding an important position in one of the colleges of the city and as a man of prominence in his calling. The assaulted party made a vigorous defense and succeeded in breaking away from these people and in subsequently having them brought in court. The explanation of the affair, as it came out at the hearing before the justice, was that these assailants had employed the doctor to treat a sick child who had died, and the parents thought the doctor had been responsible for the child's death. It appears that while the child was yet alive, the parents consulted another practitioner who told them that their child had been

[1] British Medical Journal, February 27, 1892, p. 469.

wrongly treated and would probably die. When, therefore, the death took place,the parents, moved by grief and rage, undertook to avenge themselves by publicly castigating the physician of their lost child. There is something so illogical about the accounts of this assault as conveyed to the newspapers over the telegraph wires, that we are inclined to the belief that the truth is not all told in those accounts. Persons who become frenzied by losses or affliction are capable of many inconsiderate acts, but it is exceedingly rare that that frenzy is vented against the profession devoted to healing the sick. But at the same time, no physician, however conscientious or careful, can tell what day or hour he may not be made the object of some undeserved attack, malicious accusation, blackmail, or suit for damages; "for sufferance is the badge of all our race."

Not long ago, an extraordinary incident in the lives of two physicians of Brooklyn, called attention to some of the risks incident to medical practice. It was brought to light in a suit at law of one of these physicians. These physicians were engaged in an instrumental obstetrical case, when word was taken to the husband of the patient that the life of the latter was being endangered by the use of instruments. At the critical point of the operation the husband suddenly appeared in the doorway with a shotgun and threatened the lives of the attendants if his wife should not survive the operation. Here was a conjunction of ignorance, wrath and gunpowder ripe for murder, if the work of the physicians had not ended in the recovery of the patient. In requital for their trouble and peril, these physicians were obliged to bring suit for payment for their services. All of which gives a glimpse of the possible conditions that may surprise the practitioner almost any day, and that will be encountered, as a rule, patiently and silently. Dignity, silence and patience are the lessons inculcated in the school of medical experience.

THE INCORPORATION OF THE PAN-AMERICAN MEDICAL CONGRESS.

The circular of information published in another column shows the present status of the Pan-American Medical Congress. The general officers are announced formally, but the medical press and the entire profession have long since had the information and have applauded the selections. The publication of the "Regulations" gives to the profession the most accurate idea of the scope and purposes of the congress. It is declared in the opening paragraph that there shall be a series of these congresses, the number of years' interval having been merely left vacant. It would be a good plan to arrange for the next congress to be held either in Havana or Mexico two years hence, and thereafter let the meetings be held triennially. This would bring the American event a year in advance of the World's International Congress.

It seems that the congress has been incorporated, pursuant to the action of the National Committee at St. Louis. It was there stated that a distinguished senator had consented to champion an appropriation bill in the senate, providing the congress was made a body corporate and politic, to which an appropriation could be lawfully made. As the Washington meeting, through its attention to problems of international sanitation, will have a peculiarly popular importance, it is but proper that an appropriation should be made by the national government. The congress will need the money. Already the National Committee finds itself embarrassed for funds. The incorporation was, therefore, not only important, but imperative. This incorporation, however, does not restrict the legal existence of this congress to this country. Provisions are made for terminating the corporation as soon as the funds of the forthcoming meeting are disbursed. The congress then becomes again a mere voluntary association in the hands of the International Executive Committee. The incorporation of the congress in this country cannot, therefore, give offense to our confrères in the North and South.

THE COAGULATION OF MILK AND BLOOD.

In "Notes of Progress in Physiology" in a recent number of the *Boston Medical and Surgical Journal* DR. JOS. W. WARREN refers to the work of Arthus and Pagès[1] on the above subject. Their work has also been briefly but clearly reviewed by PROF. HOWELL, of Ann Arbor.[2]

The coagulation of casein is to be distinguished from its precipitation by an acid, and from its coagulation by heat in the presence of an acid. In the process of coagulation the action of the "labferment" or rennet, is said by Arthus and Pagès, to consist in preparing the casein for coagulation, rather than in the actual curdling itself. The casein is first split up by the labferment into two substances, "hemi-caséinalbumose" and "caséogène." This latter substance then unites with the salts of the alkaline earths, particularly calcium phosphate, to form the coagulated casein.

The study of milk curdling led these investigators to study the coagulation of the blood, and they found that the coagulation of the blood may be entirely prevented by the addition to it of oxalates, fluorides, or soap. The quantity of potassium oxalate necessary to prevent coagulation of blood, is 0.1%. This amount, however, is sufficient to precipitate from the blood all the calcium present as the insoluble calcium oxalate. The action of the fluorides, and of soap, is similar, both forming insoluble compounds

[1] Archives de physiologie, XXII.
[2] Annual of the Universal Medical Sciences, 1891.

with the calcium present. If to the "oxalated" or, better, "decalcified" blood, a soluble salt of calcium be added, coagulation will occur in from six to eight minutes, the temperature conditions being suitable. Strontium acts in the same manner as calcium, but barium and magnesium do not. Fibrin, therefore, like coagulated casein, may be regarded as an insoluble salt of casein, the "fibrinogen" and "caséogène" both acting like acids.

Blood and milk curdling, then, are facilitated by influences which favor the action of the ferments, and favor the supply of calcium in the state of a soluble salt, and retarded by influences acting in an opposite direction. Heat, therefore, facilitates and cold retards these processes. Precipitating the calcium retards or prevents the action, while re-dissolving it, or resupplying it favors the action.

Some of the calcium in milk exists as the soluble mono-calcium phosphate, and is in condition to unite with the caséogène whenever that substance is formed by the action of the rennet. If, however, lime water be added to the milk, some or all of the soluble mono-calcium phosphate is transformed into the insoluble di- or tri-calcium phosphate, in which state of the calcium, coagulation can not occur. The development of weak acids, however, redissolves the calcium phosphate and permits coagulation to occur.

This affords a rational explanation of the action of lime water, whose clinical usefulness in retarding the coagulation of cow's milk, and in securing a finer subdivision of the curd, has long been known.

Wright [3] has suggested the use of soluble salts of calcium, preferably the chloride, both locally and internally for the purpose of favoring coagulation of the blood, in cases of hæmorrhage, particularly from internal organs, and Bacon [4] has suggested the use of this salt in purpura hæmorrhagica.

INNOVATIONS.

An item of interest to every member of the Association may be found on page 359 of the last issue of THE JOURNAL, wherein the Section on Ophthalmology announce through their executive committee that the Cadilac Hotel has been selected as their headquarters, and for the purpose of becoming better acquainted and cultivating a feeling of good-fellowship among the members of this Section, they will dine together Wednesday, June 8, at 6 P.M. The price of dinner tickets is two dollars. And a little further on that the Section will hold two working sessions daily, from 9 A. M. to 11 A.M., and 3 P.M. to 6 P.M. In the first place the dinner is an innovation that is worthy of imitation by the other Sections. There is a good deal of warm science in the handshake and breaking of bread together. The friction engendered smooths and polishes, while the merry-thought makes the lean to wax fat and enjoy a richness of soul that makes life worth living.

The next innovation is the announcement of two sessions of Section work every day of the meeting. This is a sort of forestalling the action of the Association, on a resolution offered at the last meeting, and to be acted upon at the ensuing meeting, fixing the time of sessions of all the Sections at from 9 A.M. to 12 M. and from 2 to 6 P.M. and the time of the general sessions to begin at 12 M. This may perhaps be amended to advantage by making the afternoon session begin at 3 instead of 2 o'clock.

The two sessions per day will obviate the necessity of reading papers by title. It will also give double the time formerly allowed for the discussions. This is very important, and as an innovation will no doubt receive the unanimous support of the members of the Association. Very often a paper of no great importance is the wedge needed to open and develop a discussion of the greatest value. These discussions will be reported by stenographers and revised by the officers of the several Sections. The perfection of the autonomy of the sections will claim attention at the ensuing meeting. Echoes come to us through nearly every mail that tell of an interest and awakening of thought that bodes good for our National Association.

* * * *

The annual increase of membership is growing larger every year, indicating a centralization of thought and aggregation of work which in its cumulation and reflection to the world of science is of inestimable value. At the yearly gathering the specialist meets with those who are delving in the same lines with himself. While the general practitioner whose field of observation covers the whole domain of medicine does not fail to bring with him, not only straws, but sheaves and stacks of grain for winnowing, garnering and the feeding of the multitude.

The annual meetings of the American Medical Association are great gatherings, and those who can attend them cannot afford to be absent.

EDITORIAL NOTES.

TOO MANY PLEAS OF INSANITY.—In the New York Legislature a bill has been placed upon the calendar, and will probably pass, to stop the abuses and miscarriage of justice in the acquittal of criminals on the ground of insanity. If this bill becomes a law, no person acquitted of a capital offense on the plea of insanity shall be given his freedom until a jury shall have released him from the asylum to which he is confined. New York, in common with some others of our States, has an antiquated criminal legislation, devised before the insanity plea became popular, so that it is not difficult for a murderer even to get an asylum sentence, and after a while get a

[3] Brit. Med. Jour., Dec. 9, 1891.
[4] Chicago Med. Recorder, Mch., 1892.

release on a *habeas corpus* writ, and again wage war on society. This undesirable procedure can be hindered if the freedom of the alleged insane criminal shall be placed in the jurisdiction of jury trial; the jury will be made to stand between the defenseless public and the possible return of maniacal violence.

ST. BARNABAS HOSPITAL OF MINNEAPOLIS.—The above named hospital is reported to have won an important decision, in the Supreme Court of Minnesota, whereby property worth $400,000 will be handed over to it. St. Luke's Hospital of New York City was an alternative legatee in this case in the event that the Minneapolis institution could not conform to certain requirements. The Court held that these requirements had been met satisfactorily, and the munificent bequest should go to the Western institution.

ERROR IN DIAGNOSIS.—The Vienna correspondent of the *American Practitioner* narrates a remarkable error in diagnosis, which is useful, not because it shows how "a great clinician may be tripped up, but because it should make the little fellows more cautious." The writer states that his authority for the statement is Dr. Kundrath, chief of the pathological institute at the University. There came one day to Professor Nothnagel's clinic a patient offering a dubious chain of symptoms. He had a very large area of dulness over the upper abdominal and lower thoracic regions of both sides. The man also gave as part of his history the fact of having had a dog to which he had been greatly attached. The diagnosis was plain to Nothnagel as one of echinococcus, and a lecture of considerable length was given to the class on that topic, preliminary to the patient's being handed over to Billroth's clinic for operation. An operation, laparotomy, was performed, but the liver was found to be normal, or nearly so; and the same was true of the spleen. The trouble was seen to be thoracic and not abdominal. The wound was closed. An autopsy was possible a few days later, when the real disease was revealed to be pericarditis with an unusual amount of effusion.

MEDICAL DIRECTOR GIHON, of the U. S. Navy, who is a prominent member and officer of the American Medical Association, and also of the American Public Health Association, is next in line of promotion, and will, no doubt, soon be appointed Chief of the Bureau of Medicine and Surgery of the Navy Department at Washington.

Dr. Gihon is one of the few United States government medical officers who have done themselves, their government and profession honor and credit by their work that is extra and outside of their official duties.

Young medical men, after passing an examination of rigorous severity, which indicates their attainments and capability for the highest type of professional labor, have, we regret to say, in too many instances, settled down to a monotonous, hum-drum professional life, without a seeming ambition to let their fellows in their own profession know of their existence.

Dr. Gihon, we all know, is not of that type, but one who keeps up a living, active identity with the members of his profession; their interests are always actively his. Dr. Gihon's promotion will therefore be gratefully received as an honor most worthily bestowed.

A NEW PLAN OF EXTENSION IN LOCOMOTOR ATAXIA. The *Press and Circular* states that one of the French periodicals, name not given, has presented to the consideration of the profession a modification of suspension for the relief of certain spinal affections. The new treatment, based upon the same *rationale* as the older plan, consists in seizing the two lower limbs and flexing these extended members upon the abdomen until the knees touch the forehead. The author, an Italian physician, Dr. Pietro Bonuzzi by name, first places the patient flat on his back with a small cushion under his head. The advantages claimed for the method are that it requires no apparatus, and that it ensures a maximum mechanical and therapeutical effect. According to some cadaveric experiments, he believes that the amount of stretching of the spinal cord thus obtained may be as great as three times that obtainable by suspension. It is further stated that the treatment has been tried several times in Vienna, and favorable results have been reported.

SIXTY YEARS IN PRACTICE.—Dr. Edwin N. Colt, of Brooklyn, was given a banquet and a gold-headed cane on the sixtieth memorial year of his settlement in that city. Being a man held in great esteem in the community, which he has seen grow up from the conditions of a village to those of a tenement district, there were representatives of every calling at the feast given to his honor. The mayor of the city participated, and members of the clergy and the press responded to toasts which made the ministers "doctors of the heart," and journalists "doctors of the circulation." Dr. Colt was born in Hinsdale, Massachusetts, in 1811; graduated at the old Berkshire Medical College, no longer extant, on the year of his coming of age, and within the same year established himself in Brooklyn.

A CORRECTION.

The title of Dr. Manley's paper, as given in the preliminary programme of the Section of Neurology and Medical Jurisprudence, should read: "The Relation of Physical Violence to Hernial Protrusions Through the Abdominal Walls, and its Medico-Legal Aspect."

THE PAN-AMERICAN MEDICAL CONGRESS.

The Committee on Permanent Organization met at St. Louis, October 14, 15 and 16, 1891, and adopted a series of General Regulations for the permanent organization of the Pan-American Medical Congress, and a series of special regulations for the government of the first meeting, and recommended that the Incorporators adopt both series of regulations as the organic law of the Congress.

Pursuant to such Regulations the following general officers were elected, viz.:

William Pepper, M.D., L.L.D., Philadelphia, Pa., President; Abraham M. Owen, A.M.,M.D., Evansville, Indiana, Treasurer; Charles A. L. Reed, M.D., Cincinnati, Ohio, Secretary General.

International Executive Committee: Argentine, Dr. Pedro Lagleyze; Bolivia. Emilio de Tomassi; Brazil, Dr. Carlos Costa; British North America, Dr. James F. W. Ross; British West Indies, Dr. James A. De Wolf; Chili, Dr. Moises Amaral; Colombia, P. M. Ibañez; Costa Rica, Dr. D. Nuñez; Ecuador, Dr. Ricardo Cucalon; Gautemala, Dr. José Monteris; Haiti, Dr. D. Lamothe; Hawaii, ———; Spanish Honduras, Dr. George Bernhardt; Mexico, Dr. Tomas Noriéga; Nicaragua, Dr. Juan I. Urtecho; Paraguay, ———; Peru, Dr. José Cassamira Ulloa; Salvador, Dr. David J. Guzman; Santo Domingo, ———; Spanish West Indies, Dr. Juan Santos Fernandez; United States, Dr. A. Vander Veer; Uruguay, Dr. Jacinto De Leon; Venezuela, Dr. Elias Roderiguez; Danish, Dutch and French West Indies, ———.

The Auxiliary Committee nominated by the various members of the Committee on Permanent Organization each for his own State, and already commissioned by the Chairman, was confirmed.

The election of officers of sections was begun, but time would not permit of the completion of the list, which was referred to a special committee with power to act. It has been deemed inexpedient to publish the list until it is completed, which can hardly be accomplished before the meeting of the Committee on Permanent Organization at Detroit in June; but the organization of particular sections will be announced through the medical press as rapidly as officers are elected by the special committee.

In accordance with the wish of the Committee on Permanent Organization as expressed in Special Regulation No. 4, Drs. I. N. Love, A. B. Richardson, L. S. McMurtry, R. B. Hall, T. V. Fitzpatrick and Charles A. L. Reed met in Cincinnati and signed the legal form of application for Articles of Incorporation of the Pan-American Medical Congress, which Articles of Incorporation were duly issued by the Secretary of the State of Ohio, under date of March 15, A. D. 1892.

At a meeting of the Incorporators held March 16, 1892, the following Regulations, general and special, recommended by the Committee on Permanent Organization were formally adopted as the organic law of the Pan-American Medical Congress in accordance with the Laws of Ohio, and all elections had by the Committee on Permanent Organization, in accordance with such regulations were confirmed and made a part of the laws of the Congress:

GENERAL REGULATIONS.

Title.

1. This organization shall be known as the Pan-American Medical Congress, and shall meet once in —— years.

Membership.

2. Members of the Congress shall consist of such members of the medical profession of the Western Hemisphere, including the West Indies and Hawaii, as shall comply with the special regulations regarding registration, or who shall render service to the Congress in the capacity of Foreign Officers.

Officers.

3. The Executive Officers of the Congress shall be residents of the country in which the Congress shall be held, and shall consist of one President, such Vice-Presidents as may be determined by special regulations, one Treasurer, one Secretary-General, and one Presiding Officer and necessary Secretaries for each section, all of whom shall be elected by the Committee on Organization, and there shall be such Foreign Vice-Presidents, Secretaries and Auxiliary Committees as are hereinafter designated.

The Committee on Organization.

4. The Committee on Organization shall be appointed by the representative medical association of the country in which the Congress shall meet. This Committee shall select all domestic officers of the Congress, and shall at its discretion confirm all nominations by members of the International Executive Committee, and in the event that any member of the International Executive Committee shall fail to nominate by the time specified by special regulation, the Committee on Organization shall elect officers for the country thus delinquent. It may appoint Vice-Presidents and Auxiliary Committeemen in foreign countries independently of nominations by the members of the International Executive Committee. It shall appoint Auxiliary Committees, arrange for the meeting, and frame special regulations for the session of Congress for which it was appointed. It shall make a report of its transactions to the opening session of the Congress.

The International Executive Committee.

5. There shall be an International Executive Committee which shall be appointed by the first Committee on Organization, and which shall consist of one member for each constituent country. This Committee shall hold permanent tenure of office except that when a member shall fail to be present at a meeting of the Congress, his office shall be declared vacant and the vacancy be filled by election held by the registered members from the country from which he was accredited. In the event of no representation whatever from the country in question, the members of the International Executive Committee present shall determine what disposition shall be made of the office.

It shall be the duty of each member of the International Executive Committee to nominate from the medical profession of his country, one Vice-President for the Congress and one Secretary for each Section of the Congress, and to forward the same to the Chairman of the Committee on Organization; except that in any country in which the Congress shall meet, it shall be the duty of the member of the International Executive Committee for that country to request his representative national medical association to appoint a Committee on Organization, which Committee on Organization shall discharge the duties designated in Regulation IV. Members of the International Executive Committee shall also nominate such Auxiliary Committees, and shall furnish such information as the Committee on Organization may request.

6. The Committee on Organization may at its discretion cause the Congress to be incorporated, which incorporation shall hold only until the final disbursement of funds for the session held in that particular country. In the event of such incorporation such officers shall be elected and in such manner as may be required by law.

7. The following shall be considered as the constituent countries of the Pan-American Medical Congress:

Argentine Republic, Bolivia, Brazil, British North America, British West Indies (including B. Honduras), Chili, Honduras (Sp.), Mexico, Nicaragua, Paraguay, Peru, Salvador, Colombia, Costa Rica, Ecuador, Guatemala, Haiti, Hawaiin Islands, Santo Domingo, Spanish West Indies, United States, Uraguay, Venezuela, Danish, Dutch and French West Indies.

8. The Sections of the Congress shall be as follows:

(1) General Medicine, (2) General Surgery, (3) Military Medicine and Surgery, (4) Obstetrics, (5) Gynecology and Abdominal Surgery, (6) Therapeutics, (7) Anatomy, (8) Physiology, (9) Diseases of Children, (10) Pathology, (11) Ophthalmology, (12) Laryngology and Rhinology, (13) Otology, (14) Dermatology and Syphilography, (15) General Hygiene and Demography, (16) Marine Hygiene and Quarantine, (17) Orthopædics, (18) Diseases of the Mind and Nervous System, (19) Oral and Dental Surgery, (20) Medical Pedagogics, (21) Medical Jurisprudence.

Languages.

9. The languages of the Congress shall be Spanish, French, Portuguese and English.

Auxiliary Committees.

10. The Auxiliary Committee shall consist of one mem-

ber for each medical society on one for each considerable centre of population in each of the constituent countries of the Congress. Nominations for the Foreign Auxiliary Committee shall be made to the Chairman of the Committee on Organization by the members of the International Executive Committee, each for his own county, except that in the country in which the Congress is to be held nominations shall be made by the Committee on organization. Appointments on the Auxiliary Committee shall hold only for the meeting for which they were made.

Members of the Auxiliary Committee shall be the official representatives of the Congress in their respective localities. It shall also be their duty:

(1) To transmit to the profession of their respective districts all information relative to the Congress forwarded to them for that purpose by the General Officers.

(2) To coöperate with the Officers of Sections in securing desirable contributions to the proceedings of the Congress.

(3) To furnish to the General Officers such information as they may request for the purpose of promoting the interests of the Congress.

(4) To cause such publicity to be given to the development of the organization as will elicit the interest of the profession and secure attendance upon the meeting, and they shall discharge such other duties as will promote the welfare of the Congress.

SPECIAL REGULATIONS OF THE FIRST CONGRESS.

Time and Place of Meeting.

1. The First Pan-American Medical Congress shall be held in the City of Washington, D. C., September 5, 6, 7, 8, A. D. 1893.

Registration.

2. The Registration fee shall be $10.00 for members residing in the United States, but no fee shall be charged to foreign members. Each registered member shall receive a card of membership and be furnished a set of the transactions.

Abstracts, Papers and Discussions.

3. Contributors are required to forward abstracts of their papers, not to exceed six hundred words each, to be in the hands of the Secretary-General not later than the 10th of July, 1893. These abstracts shall be translated into English, French, Spanish and Portuguese, and shall be published in advance of the meeting for the convenience of the Congress, and no paper shall be placed upon the program which has not been thus presented by abstract. Papers and discussion will be printed in the language in which they may be presented. All papers read in the Sections shall be surrendered to the Secretaries of the Sections; all addresses read in the General Session shall be surrendered to the Secretary-General as soon as read; and all discussions shall be at once reduced to writing by the participants.

Incorporation.

4. The Chairman of the Committee on Organization shall cause the Congress to be incorporated under the laws of Ohio, and fifteen trustees shall be elected in accordance therewith, who by the by-laws and through the Executive Committee shall supervise all receipts and disbursements by the Treasurer in accordance with the laws of Ohio. The President, Secretary-General, Treasurer, the member of the International Executive Commitee for the United States, and Chairmen of Sections shall be *ex-officio* members of the Board of Trustees.

Foreign Nominations.

5. All nominations by the International Executive Committee must be in the hands of the Chairman of the Committee on Organization by June 1, 1892, and in default thereof the Committee on Organization shall elect officers for countries thus delinquent.

The Organization of Sections.

6. The officers of each Section shall consist of: —— Honorary Chairmen, who shall be residents of the constituent countries of the Congress; one Executive Chairman, who shall organize the work of the Section, direct its deliberations, and deliver an inaugural address at its opening session; one English-speaking Secretary and one Spanish-speaking Secretary, residents of the United States, who shall coöperate with the Executive Chairman in conducting the correspondence of the Section; and there shall be one Secretary for each Section, resident in each additional constituent country of the Congress.

Domestic Auxiliary Committee.

7. The Auxiliary Committee for the United States shall be elected by the Commitee on Organization, and shall consist of one member for each local medical society, or, in the absence of medical organization, then one in each considerable centre of population, which Auxiliary Committee shall coöperate with the Committee on Organization and with the General Officers in promoting the welfare of the Congress. Nominations for the Auxiliary Committee shall be made by members of the Committee on Organization, each for his own State, except that in the failure of any member to make such nomination by January 1, 1892, or in the inadequacy of the same, the Chairman of the Committee on Organization shall supply the deficiency.

Executive Committee.

8. The Board of Trustees shall designate seven members, including the President, Treasurer, Secretary-General, and member of the International Executive Committee for the United States, who shall comprise an Executive Committee which shall transact all business of the Congress *ad interim* in accordance with By-laws adopted by the Board of Trustees.

Amendments.

9. Amendments to these regulations can be made only by the International Executive Committee on a majority vote, ten members constituting a quorum, at any meeting of the Congress.

Pursuant to the Laws of Ohio and the Regulations adopted as above, and in accordance with nominations by the Committee on Permanent Organization, the Incorporators elected fifteen Trustees as follows:

Dr. W. T. Briggs, Tenn.; Dr. Geo. F. Shrady, N. Y.; Dr. P. O. Hooper, Ark.; Dr. S. S. Adams, D. C.; Dr. H. O. Marcy, Mass.; Dr. J. F. Kennedy, Iowa; Dr. H. D. Holton, Vt.; Dr. L. S. McMurtry, Ky.; Dr. N. S. Davis, Ills.; Dr. Levi Cooper Lane, Calif.; Dr. I. N. Love, Mo.; Dr. Hunter McGuire, Va.; Dr. J. C. Culbertson, Ill.; Dr. A. Walter Suiter, N. Y.; Dr. C. H. Mastin, Ala.

Drs. L. S. McMurty (Ky.), I. N. Love (Mo.), and W. W. Potter (N. Y.), were designated to act as members of the Executive Committee.

The organization of the Congress is complete in British North America, the British West Indies, the Spanish West Indies, Guatemala, Nicaragua, United States of Colombia, Brazil, Uruguay, Venezuela and the Argentine. It is confidently expected that the nominations from the remaining countries will be in by June.

It is expected to announce the completed organization of the Congress, its sections and auxiliary committees, domestic and foreign, by July 1, 1892.

On behalf of the Committee on Permanent Organization,

CHARLES A. L. REED, Chairman.

J. W. CARHART, Secretary.

CHARITIES AND CORRECTION.—Until the present century, the policy of Europe in dealing with crime and pauperism, was the best possible if the object had been to propagate and increase them both. The States of the New World necessarily copied many of the methods of the Old. Unfortunately, along with much that was true and wise, they copied and perpetuated many old blunders. But with the advance of modern thought, especially with the enormous widening of the sphere of scientific knowledge, have come new and better ways of dealing with the defective, the criminal and the pauper.

To spread abroad and make popular the better ways in charity and reform, is the object of the National Conference of Charities and Correction, which meets annually in one or other of our great cities, and will hold its nineteenth annual session in Denver, Col., next June. It combines the best philanthropy of all creeds and all shades of political opinion, upon the broad platform of humanity. Its programme for the year has just been issued, and is an interesting paper, its topics covering many of the social problems of the time.

The membership of this Conference is unique. It has no salaried officers, and no selfish benefit to offer to any one, so its doors are open to all the world; whosoever will may come in, on a footing of the most perfect equality. The fact that you are interested in its work, makes you a member, and entitles you to a seat and a voice in its discussions. Any one desiring further particulars as to reduced railroad fare, hotel accommodations, etc., may address Alexander Johnson, Secretary, Indianapolis, Ind., who will send circulars and answer inquiries.

BOOK REVIEWS.

PTOMAINES, LEUCOMAINES AND BACTERIAL PROTEIDS; OR THE CHEMICAL FACTORS IN THE CAUSATION OF DISEASE. By VICTOR C. VAUGHAN, Ph.D., M.D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, and FREDERICK G. NOVY, Sc.D., M.D., Assistant Professor of Hygiene and Physiological Chemistry in the University of Michigan. Second Edition. Philadelphia: Lea Brothers & Co. 1891.

This work has developed enormously since its first edition, as indeed it has had to do to keep pace with its subject. It has been necessary to change the very title of the book. When the first edition was issued ptomaines and leucomaines, alkaloidal bodies, were the only substances of bacterial or cell origin, known to be concerned in the production of disease processes. Since then, however, the very important class of bacterial proteids has been discovered, and the authors wisely generalize the title of their book, by not only including these substances, but also provide for further expansion in the term "chemical factors."

A large number of works on bacteriology are before the profession, but this is the only work which presents the chemical aspect of the question. It can hardly be doubted but that, in most instances, microörganisms produce their effects through the agency of the chemical substances elaborated in their growth. The importance, then, of the study of this link between the microörganisms and the disease, should be apparent. To supply this link is the object of this book, and it has fulfilled its purpose, so far as the present development of the subject will permit.

The current literature has been searched most faithfully for material, and the compilation of the important work which has been done upon the matters treated in the book, has been thorough.

The theoretical portions of the work are pleasing and satisfactory. The chapter entitled "General Considerations of the Relations of Bacterial Poisons to Infectious Diseases," is worthy the most careful study.

THE PRINCIPLES OF BACTERIOLOGY: A PRACTICAL MANUAL FOR STUDENTS AND PHYSICIANS. By A. C. ABBOTT, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Illustrated. Philadelphia: Lea Brothers & Co. 1892.

This book deals with the methods of the bacteriological laboratory, and its principal use will be for students actually engaged in this line of work. The book is a good one of its kind.

A MANUAL OF HYPODERMATIC MEDICATION. By ROBERTS BARTHOLOW, A.M., M.D., LL.D. Fifth Edition. Philadelphia: J. B. Lippincott Co. 1891.

This last edition of Bartholow's famous work has assumed imposing proportions, having become a book of over 500 pages. And as is customary with the works of this author, no useless material encumbers its pages.

The book opens with an accurate and instructive description of the technique of the method, and follows with a full description of probably all drugs that can be used subcutaneously. It must not be supposed that it is limited to the dosage and preparation of the materials to be used, but each remedy is very fully discussed, and its therapy clearly expressed. The section upon the "Digitalis Group" is a masterly effort. It includes a description of the physiological effects, and the therapy of digitalis, sparteine, convallaria, strophanthin, adonidin, adonin and blattic acid, as well as a critical inquiry as to the particular uses of each, and their relative merits in different conditions.

THE COMPLETE MEDICAL POCKET FORMULARY AND PHYSICIAN'S VADE MECUM. Collated by J. C. WILSON, A.M., M.D. Philadelphia: J. B. Lippincott Co. 1892.

This work is a collection of 2,500 prescriptions arranged under an alphabetical list of diseases. No indication is given of the particular conditions under which the prescriptions printed have been used by their authors. Under the heading of rickets is a prescription calling for tannic acid, gr. ½–gr. j, to be given two or three times a day. The only direction which appears to guide its use is the expression *In rickets.* Presumably it is to be used in the diarrhœa of rickets, but the man who has no better way of handling the diarrhœa of rickets, than by striking madly at it with small doses of tannic acid, had better not attempt to treat rickets.

Under the head of mammary inflammation there appears one of Rush's prescriptions for calomel and jalap, 10 grs. each. It is marked *Brisk purge for incipient mastitis.*

We are informed in the preface that such works are valuable for ready reference, and for suggestions. This is possibly true at times, but it is just such half work as this which makes careless practitioners. There are already too many conditions which favor slipshod work, to permit another such factor to slip in.

The book is called a pocket formulary, but gentlemen purchasing it will find a large pocket necessary for its accommodation. An outside overcoat pocket will hold it, but any other pocket in the ordinary clothing of a man would prove insufficient, unless given up solely to this book.

We cannot recommend this book.

A DICTIONARY OF TREATMENT; OR THERAPEUTIC INDEX, INCLUDING MEDICAL AND SURGICAL THERAPEUTICS. By WILLIAM WHITLA, M.D., Professor of Materia Medica and Therapeutics in the Queen's College, Belfast, etc. Revised and adapted to the Pharmacopœia of the United States. Philadelphia: Lea Brothers & Co. 1892.

The matter appears under the names of various diseases and symptoms, arranged alphabetically, and makes a volume of 900 pages. The author in his preface rather regrets the condensation which has been necessary, but in no instance has he sacrificed clearness to brevity. The matter is all the more valuable from having been drawn largely from the author's own experience, and his discussions of the various conditions arising in the course of diseases, and of suitable treatment for each, shows him to be a man of wide practical knowledge, and stamps his words with the ring of authority. His presentation of the treatment of valvular lesions of the heart, is alone well worth the price of the book. None of the single books on the practice of medicine now before the profession, handle the subject of treatment so thoroughly or so satisfactorily as this work. The book will be found by the careful practitioner to be not merely a source of suggestion, but of reliable and trustworthy information.

GROWING FEVER.—Barbillion has written a long article on the so-called growing fever of children. His conclusions are that the fever of growth no more exists than does a fever of obesity or of senility. The symptoms which have been grouped under this head are due to a great variety of causes, such as are seen in ephemeral fever, stomach troubles, acute osteomyelitis and other pathological lesions.—*Rev. Mensuelle des Maladies de l'enfance*, January, 1892.

SELECTIONS.

QUILLS AS DRAINAGE TUBES.—Quills as drainage tubes have been suggested by Dr. Beach, of Massachusetts, and they have been used by him for the past two years for this purpose. The goose quills are those which are used for the finer grades of camel's hair brushes. The quills are taken without cutting off the dermal end, and perforated at intervals with an ordinary round leather punch. A delicate and smooth-pointed tube is thus provided, presenting the maximum lumen and minimum thickness of wall. The tube is made from a natural appendage, and is absolutely unirritating. It can readily be cut with scissors, and is not fragile like glass. It does not undergo any of the irritating chemical changes which are frequently seen where rubber tubes have remained for any length of time. The tubes are preserved in a sublimate or carbolic solution, and are easily sterilized.—*Gaillard's Medical Journal.*

THE HEADACHES OF CHILDHOOD.—Growing pains are more of a myth in regard to origin than in point of discomfort. The latter is very real. Headaches of the period of growth, so-called, Dr. Jules Simon thinks very often due to causes other than those associated with organic development. This matter is treated at length in the *Journal de Médecine et de Chirurgie*, November 10, 1891. Headache in pale, puffy, sleepy-eyed children, coming on after meals, is a digestive headache, due to dyspepsia that may be brought into existence by bolting the food, eating too frequently or at hours unwisely chosen, or too heartily at supper-time, or too near the hour for going to bed. Such headaches are benefited by reducing the evening meal to the minimum, sometimes suppressing it altogether, by warm drinks, by abdominal massage, and electricity applied to the abdomen. There is one kind of headache that is purely nervous, the headache of environment, so to speak, due to educational methods that result in a sort of perpetual exhaustion. This headache is worse toward evening. It may also be an expression of one of three distinct nervous disorders in this incipient state—of hysteria, epilepsy and chorea. The epileptic headache Dr. Simon considers easy of recognition, for the pain comes on periodically and lasts an hour or two; often the character undergoes temporary change, and the patient is for the time incapacitated. Bromide acts well in such cases, also belladonna. These failing, the polybromides are usually successful. Hygiene is the mainstay. It must ever be borne in mind that children suffering from nervous headache are very sensitive to cold, and that they should be clad accordingly.

The choreic headache is difficult to diagnosticate at first, especially when the movements are but slightly accentuated. Antipyrin, which Dr. Simon calls the remedy for chorea, given in large doses, will cure this form of cephalalgia. The rheumatic or uric acid headache in children is usually an expression of gouty or rheumatic hereditary tendencies. Two interesting cases are cited—one a boy who appeared to have meningitis, yet recovered in a surprisingly short time under treatment, of which an important element was bromide of potassium. The other, a girl 15 years of age, suffered from persistent headache with congestive crises. Bromide was tried three months without avail. Small doses of salicylate of soda, followed by colchicum and valerian, induced rapid improvement in a remarkably short space of time. The rheumatic or uric acid headache, in its clinical aspects, presents certain special characteristics. It is often accompanied by supra-orbital or post-cervical neuralgia, by joint troubles, and shifting symptoms that find expression in different parts of the organism. The urine is concentrated, cloudy, and contains urates in abnormal quantity. There is often profuse sweating without apparent cause, and attacks of colliquative diarrhœa. The foregoing are diagnostic points. Pain is first to be overcome. But the true remedies are those that relieve congestion, as the bromides, salicylate of soda and colchicum. Diet plays an important part. Our French authors consider children subject to rheumatic headaches often sluggish in mind and body, and indifferent to exercise. This they must be forced to undertake. Stimulation in the way of dry rubbings, and rubbings with warm liniments, are advised.

Even very little children do not escape malarial poisoning that gives rise to violent headaches. Quinine and hydrotherapy will cure this condition, that is intermittent, accompanied by neuralgia, sweating, and general irritability. Other headaches due to poisoning are those that follow the protracted use of drugs, such as belladonna, opium, iodide of potassium and digitalis.—*Medical Record.*

THE RELATION OF CHOREA TO RHEUMATISM AND HEART DISEASE.—The relation of chorea to rheumatism and heart disease has always been a subject on which very divergent views have been entertained. The great frequency with which endocarditis is found in fatal chorea makes the theory originally advanced by Kirkes, that the disease is caused by emboli blocking the arterioles of the motor centres, at first sight a very plausible one. That this is the explanation of the mode of origin of a few cases of chorea is probable, but it certainly cannot be the cause of the great majority of cases, for we find that chorea generally sets in without any previous endocardial inflammation.

A recent writer (P. Meyer in the *Berliner Klin. Wochen.*) gives an account of 121 cases of chorea treated in Henoch's klinik during the past five years. In 9 per cent. of the 121 cases there was a history of rheumatic symptoms, and in 10 per cent. heart disease without any rheumatic symptoms was made out. In 2 per cent. of the cases both heart disease and rheumatism were present. From these statistics Meyer concludes that chorea is merely a symptom which can be induced by the most varied causes. This, however, is only a partial representation of this subject. Any hypothesis which does not take into consideration the functional predisposition to chorea cannot be accepted as adequate to explain its nature. This functional predisposition is necessarily always present. It essentially consists in the want of a due stability in certain motor areas. It is the element in chorea that is inherited, and without which the disease cannot be brought about. It is true that it is possible to have an acquired instability of certain cortical areas, as the result of many diverse injurious influences.

Given this instability of the motor cortex, the causes that may induce choreic movements are very various. In one case it may be simple emotion, in another any internal or external poisonous agent. In the latter class we include the poison of rheumatism. This poison, then, induces not only this disease, but the chorea and endocarditis. There are no grounds for entertaining the opinion sometimes expressed that chorea causes endocarditis. When the three diseases appear in the one case, it is more than probable that they are induced by some poison, either the rheumatic or allied poison, and in such cases the proper treatment is the treatment of the rheumatic state.—*Gaillard's Medical Journal.*

RETRO-PHARYNGEAL ABSCESS IN INFANCY, AND ITS TREATMENT.—Bilton Pollard has collected four cases (three in his own practice) of retro-pharyngeal abscesses in children varying in age from seven months to two years and one month, all ending in recovery. In each case the abscess had no relation to spinal caries, and was evidently local in char-

acter. The author is of the opinion that the tonsils are rarely, if ever, the seat of the disease in children of this age. As soon as the abscess is diagnosed it should be opened, and two methods are practicable: either internal or external. The first is the more tempting; but on account of the fact that it cannot be properly drained, and the opening may close and allow the pus to again accumulate, the external excision, as is recommended by Chiene in chronic retro-pharyngeal abscess depending on spinal caries, is preferably used.

The operation was done as follows: An incision in the posterior triangle about one inch long and about one inch below the mastoid process was made along the posterior border of the sterno-cleido-mastoid muscle. When the fascia covering the muscles is reached, a cautious dissection with blunt instruments is made behind the deep vessels of the neck, until a finger placed in the wound almost met another placed in the pharynx. A director guided by the finger was then passed into the abscess, and the opening enlarged by passing a pair of dressing forceps into it, and forcibly separating the blades. A drainage tube is inserted, and care is to be taken that it does not slip out, as it did in one of the author's cases, and the pus again accumulate.—*The Lancet*, February 13, 1892.

Epidemic of Contagious Porrigo in Infants.—Jonathan Hutchinson gives an interesting account of an epidemic of contagious porrigo (impetigo contagiosa) occurring in infants born in the maternity ward of St. Pancreas Workhouse, England. The starting of the epidemic seems to have been due to vaccination, but afterward no connection could be traced with the vaccine virus. The eruption was bullous, non-symmetrical, easily curable, of a local character, and with but little constitutional disturbance. It was decided that the wards should be closed for a month, and every possible means of disinfection should be employed. This was done; but on again opening the wards, after several children had been born and discharged healthy, the eruption again broke out. Several of the mothers contracted the disease, and it appeared on them as an impetiginoid eczema.—*Archives of Surgery*, January, 1892.

Camphoric Acid for the Night-Sweats of Pulmonary Tuberculosis.—Probably there is nothing so unpleasant or aggravating in tuberculous patients as the profuse sweating that occurs either in the morning or during the entire night. The depression following it does not seem to be due to the sweating itself, but rather to the effects of a gradual increase in the quantity of carbonic acid gas in the blood, incident to the difficult interchange of gases in consequence of the pulmonary affection. It is well known that in normal respiration the blood does not contain so continuously a high percentage of carbonic acid gas as will cause a less sensitive condition of the centers governing respiration. But in pulmonary tuberculosis, when the energy used in the daily exertions, from excessive coughing or other physical causes, more than exceeds the supply of energy and nutrition that can be furnished by the body, the respiratory centers are greatly depressed, and are not stimulated so quickly by a percentage of carbonic acid gas that normally would affect those centers. The centers presiding over the functions of the sweat glands, not being affected by the physical causes, respond to the increased stimulation, and pour forth their secretion abundantly. The proper therapeutic mode of combating this functional perversion would seem to be to use such a drug as shall stimulate the respiratory centers, and thereby cause the elimination from the blood of more carbonic acid gas, and in this indirect manner act as an anhidrotic.

Camphoric acid seems to effect this object with less derangement and more satisfactory and lasting results than any other drug. This remedy is best given in doses of twenty grains from four to six hours before the period of sweating is expected. The best method of administration is dry on the tongue, and washed down with a little water. The taste of the drug is not unpleasant; neither does it produce the gastric irritation so frequently experienced with many medicinal agents used under like conditions.—James Wood, M.D., in *Medical News*.

Nitrate of Silver in Blennorrhœa of the Conjunctiva.—J. H. Thompson (*The Southern Clinic*, January, 1892) believes that no antiseptic applicable to the conjunctiva equals nitrate of silver. He admits the value of bichloride of mercury under ordinary circumstances, but thinks that its application in a strength equal to that in which nitrate of silver is efficient is detrimental. He points out the depth to which gonococci enter into the tissues, and consequently the value of nitrate of silver in the treatment of the diseases which are under their influence, because this salt, in addition to its germicidal value, is a superficial caustic and an astringent. He uses a strong solution in preference to the mitigated stick.

Soap in the Treatment of Affections of the Lid Margins.—Wolffberg (abstract *Centralbl. f. Prakt. Augenheilk.*, December, 1891, p. 384) advocates, from the hygienic standpoint, the use of a neutral fluid soap as a means of washing the borders of the lids. The ciliary margins are thus freed from the milder types of the affections to which they are subject, and are protected against severe sequelæ.

NECROLOGY.

Lewis Potter Bush, A.M., M.D., LL.D.

For many years he filled a high and useful station as physician, Christian, philanthropist, scientist, and as an active worker in the various medical and scientific bodies in which he has been a member, and over which he has presided. Prominent as a leader of the medical profession of the State, he endeared himself to the entire medical faculty of Delaware. He ranked high as a sanitarian, and his indefatigable labors in the State Board of Health, and as a contributor to the literature of this science, bear ample witness. For many years he was a member of the American Medical Association, and always took an important part in the deliberations of that National body. As a member of the Medical Society of the State of Delaware, he rarely missed the annual meetings, sometimes occupying the chair as presiding officer, and at all times foremost in the conduct of its affairs. He was also President, during a term, of the American Academy of Medicine, and in full sympathy with its efforts to raise the standard of medical education in America. He was thoroughly identified with educational work, and President of the Delaware College.

Though a veteran in his profession, Dr. Bush was broad and liberal in his views, always courteous to his peers, and a friend and father to his juniors. In early days he served as a member of the staff of the Philadelphia Hospital, contemporaneously with the eminent Professor Stillé, and these two great men held each other in mutual admiration from that time. His hospital life gave him great advantage in physical diagnosis, and his trained ear was rarely at fault. This, coupled with his great learning and experience, and his strict professional integrity, made his services to the younger members of the profession invaluable. In fact, his many virtues and attainments, his talents, his learning and professional skill, caused his long life to be a singularly useful one, and he has come to his grave in full age, "like as a shock of corn cometh in his season."

Dr. Bush possessed in an eminent degree all the qualities of mind and heart appropriate to the accomplished and successful physician, patriotic citizen and Christian gentleman. His principal merit, however, was a moral one. "The charm that was constantly diffused over his countenance and manners was the effect of the habitual benevolence of his temper. The silence of pain, and the eye of hope, which took place in his patients the moment he sat down by their bedside, were produced not more by their conviction of his skill, than by their unlimited confidence in his sympathy and integrity. The affectionate attachment and esteem of his friends was founded in the belief that his deeds of kindness were not simply the effect of spontaneous feeling, but the heartfelt sense of moral obligation." And "he shall return no more to his house, neither shall his place know him any more." But in the records of illustrious men who have adorned the medical profession of the city and State, and occupied a high place in the religious and social life of the community, Dr. Lewis P. Bush will always maintain a distinguished rank.

DR. GEORGE MONTGOMERY died in New York City, March 18, 1892. He was until a few weeks ago a prominent practitioner of Newburyport, Mass. He was a native of New Hampshire, born in Stratford in 1834, and was graduated from the Medical School of Bowdoin College in 1854. During the late war he was surgeon with the New Hampshire volunteers. He was a member of the Medical Society of Massachusetts since 1874.

MISCELLANY.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION will hold its next meeting at Richfield Springs, New York, June 23. President, Dr. Willis E. Ford, Utica, N. Y.; Dr. J. B. Walker, Secretary, 1617 Green street, Phila.

AMERICAN MEDICAL ASSOCIATION, SECTION OF MEDICINE.—Comparatively few papers have yet been promised for this Section. The officers of the Section are nevertheless confident of a meeting more than ordinary in its scientific value. Those desiring to contribute papers should at once notify the Secretary, James M. French, M.D., 190 Baymiller St., Cincinnati, O.

A PRETENDER.

[TRANSLATION.]

BERLIN, February 11, 1892.

In some of the American lay journals, especially in Cincinnati, the following misuse is made of the name of Virchow. In these papers is an announcement that the great German physician, Dr. Karl Virchow Schick, just arrived from Germany, is prepared to give consultations. He claims to have made important discoveries in the germ treatment of chronic diseases, and that his prescription is used by 806 physicians of Europe. In the official register no physician of this name is to be found in Berlin or Germany.

The intention of this man is evidently to mislead the great public by means of the name of Virchow. I would request you, honored colleague, to have this letter published in order to protect the public against imposition.

Yours truly, DR. S. GUTTMAN,
Editor *Deutsche Med. Wochenschrift.*

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—The Forty-second Annual Meeting will be held in Harrisburg, on Tuesday, Wednesday, Thursday and Friday, May 17, 18, 19 and 20, 1892, commencing on Tuesday, May 17, at 9 A.M.

Appointments for 1892.—1. Address on Practice of Medicine, Dr. J. H. Musser, Philadelphia; 2. Address on Surgery, Dr. T. D. Davis, Pittsburg; 3. Address on Obstetrics, Dr. H. G. McCormick, Williamsport; 4. Address on Mental Disorders, Dr. J. W. Phillips, Clifton; 5. Address on Otology, Dr. G. R. Rohrer, Lancaster; 6. Address on Hygiene, Dr. A. A. Woods, Erie.

To be Acted Upon.—Report of Committee on Pharmacy, Dr. H. A. Hare, Philadelphia, Chairman; Report of Committee on Contagious Ophthalmia, Dr. J. A. Lippincott, Pittsburg, Chairman; Report of Committee on Rush Monument Fund, Dr. W. Murray Weidman, Reading, Chairman.

Chairman of Committee of Arrangements, Dr. William T. Bishop, 211 Pine street, Harrisburg, to whom all applications to read papers at this session should be sent, not later than April 1.

Secretaries of County Medical Societies are earnestly requested to forward at once complete lists of their officers and members, giving the post-office address of each.

Every delegate, before admission, shall present a certificate of delegation, signed by the president or secretary of his county society.

Every permanent member (not a delegate), before admission, shall present a certificate of good standing in his county society.—*Extract from Constitution.*

WM. B. ATKINSON, Permanent Secretary.

The following beautiful tribute to one of the Masters in our Art is from the pen of Dr. Wm. Porter, and taken from the *Clinique*.

SIR MORELL MACKENZIE.

The master rests. After the day of toil
An urgent message came to him, and he
Well used to sudden calls, in quiet haste,
With kind good-night went out and all was still.
And now his work is done; to him no more
Will come the suffering ones and those who need
The helping hand and words of goodly cheer.
His last response completed all his work.
O, strong and gentle heart, ours is the loss
Who knew thee well—and knowing loved thee more.
Ours is the loss and thine the great reward.
We crown thee victor, O thou kingly dead.

SNAKE-BITE.—Dr. Kaufmann, who recently took the Orfilia prize of the Paris Academy of Medicine for a memoir on serpent venoms, says that chromic acid is the best remedy for snake-poisoning. It is employed in one per cent. solution by intra-muscular injection, the needle being plunged into the tissues at the point where the bite was received. In this strength, he says, the acid exerts no caustic action in the tissues, while it destroys thoroughly the toxic properties of the venom.

MEDICAL ADVERTISING, both direct and indirect, is growing in favor with a certain class of doctors, and their more quiet brethren do not know how to stop them.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 12, 1892, to March 18, 1892.

First Lieut. William N. Suter, Asst. Surgeon U. S. A., granted leave of absence for four months, from March 22, 1892.

Lieut.Col. Francis L. Town, Surgeon U. S. A., while on duty at Hdqrs. Dept. of California, in charge of the office of the Medical Director, will, in addition to said duty, examine recruits at the rendezvous in San Francisco, Cal.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending March 19, 1892.

P. A. Surgeon E. H. Marsteller, ordered to duty at the Naval Academy.

P. A. Surgeon W. F. Arnold, from the "Vermont," and to the "Richmond."

Asst. Surgeon C. H. T. Lowndes, from the "Richmond," and to the "Vermont."

Surgeon D. Dickinson, from the Navy Yard, Mare Island, and two months' leave.

Surgeon A. M. Moore, from Naval Hospital, Mare Island, and to Navy Yard, Mare Island.

Surgeon E. Norfleet, from the U. S. S. "Monocacy," and granted three months' sick leave.

Asst. Surgeon G. T. Smith, from the U. S. S. "Mohican," and to the coast survey Str. "Hassler."

Asst. Surgeon L. L. Young, from the "Independence," and to the "Mohican."

Medical Director W. K. Scofield, granted one year's leave of absence, with permission to leave the United States.